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PRINCIPAL CONTENTS.

Iron Ores and Iron Manufacture in Massachusetts....385
Notes of Travel—By J. T. H....387
Mechanics—By C. T. J....388
Floods of the Mississippi....388
Progress of Milwaukie....389
Railroad Share List....390
New Mode of Casting....391
Cotton Manufacture at Reading....392
Working Railways by Contract....392
Erie and North-eastern Railroad....392
Georgia Railroad....393
Railway Progress at the South....394
Improved Buffers and Brakes....395
New Coupling Clamps....395
Depreciation of Railway Property in England..395
Blake's Fire Proof Paint....399

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Saturday, June 23, 1849.

Iron Ores and the Iron Manufacture of the United States.

MASSACHUSETTS.

Continued from page 370.

Stockbridge Furnaces.—Three miles and a half below the village of Stockbridge, are the two furnaces of the *Stockbridge Iron Company.* They are built on an excellent privilege afforded by the Housatonic river, which falls at this place over a dam 21 feet in height. One of them was built in 1832; the other by C. C. Alger, Esq., in 1846.

As these furnaces, under the skilful management of Mr. Alger, have produced greater results than other furnaces of their size supplied with the same ores, I shall describe them somewhat in detail; and the great extent and importance of the mine which furnishes them with ores, will call for particular notice of it also.

The *West Stockbridge ore bed* lies a mile northwest from the village of this name, and this is about five more from the furnaces. It is principally owned by the Stockbridge iron company—the Lenox and Richmond companies having a right to dig ore in a small portion of it, paying a duty of 37½ cents for every ton of ore removed. It is about half a mile south of the West Stockbridge railroad—a short road of 2¼ miles, which connects the Housatonic with the Western and with the Hudson and Berkshire railroads, meeting the two last at the "State line depot." A branch is laid out from the mine down to the W. S. railroad. When this is completed, the ore will go down the Housatonic railroad to Vandeusenville and thence by the new road now in progress up the valley of the Housatonic directly past the furnaces. Hitherto the ore has been hauled by teams at an expense of one dollar per ton. By the Hudson and Berkshire railroad it may be carried to the Hudson river a distance of about 32 miles at the same expense, and be there smelted with anthracite.

The ore bed lies along the southeast side of one of the limestone ridges, so common in this region. A gap in the ridge, through which passes the county road, divides the mine at present into two parts.—The one on the north side is called the *Leet-bed;* the one on the south side the *Chauncey Leet-bed.* The workings are fast approaching each other, and will no doubt ultimately meet, proving the continuity of the deposit of ore. Admitting this, the whole extent of the bed, so far as proved, is 124 rods—more than a third of a mile in length. Its extension towards the north is limited with the ridge, the ore ceasing where this abruptly terminates. But against the ridge a deep chasm, commenced in 1826, has been opened 100 feet wide and 70 feet deep. Altogether it may be four or five hundred feet in length. Throughout this space the ore was found in alternating strata with ochres and clays—their materials sometimes confusedly mixed together, and sometimes showing a stratiform structure with a dip of about 45° towards the southeast, conforming to the dip of the limestone. The layers of solid ore occasionally exceed ten feet in thickness; and parallel layers are separated from each other by a few inches or many feet of clays and ochres. The quantity of ore in any given limits cannot be determined, therefore, in this portion of the mine with any accuracy.

The quality of the ore is generally very good—being a pure hematite little mixed with siliceous matters: the talcose character of some of the clays seems to indicate that it may have been derived from talcose slates; but the ore itself is generally free from foreign mixtures. The prevailing variety is of a chocolate brown color passing into black—of porous structure, and from this passing to close compact ore. It contains some manganese, and a bed of tolerably pure black oxide of manganese of unknown extent is found a few rods northeast of the great excavation. Phosphoric acid in small quantity is also detected by analysis, but neither this nor the manganese is in sufficient quantity to injure the ore. On the contrary the latter is thought to improve it essentially, not only in aiding to flux the ore, but also in giving to the iron a superior toughness. In two previous numbers of the Journal I have given analyses of a specimen of hematite from this mine, and also of the *carbonate of iron*, found in ledges associated with the hematite in the northerly part of the Leet bed. This ore, thrown away for many years, in consequence of its light color and stony appearance, was found by Mr. Alger to be exceedingly well adapted to work with the hematites; and it is now highly prized. The quantity is very uncertain; the principal supplies seeming to be limited to the northern parts of the mine.

The large excavation from this point is drained to the depth of ninety feet from the surface by an adit-level of more than a thousand feet in length. This work was projected and executed by Mr. Alger several years since at an expense of over $3500. A shaft had been sunk below the adit about thirty feet in the same materials as are found above. The ore, however, seems to increase in proportion to the other materials with the depth. Most of the work, fortunately, in this large excavation has been executed without system, and with total disregard to the permanent interest of the mine, and indeed to the safety of the workmen—their good fortune alone having saved them from being buried alive by the occasional slip of large portions of the steep banks. Though no lives have been lost, great quantities of good ore are rendered inaccessible at any expense within their value. At the southern extremity of the Leet bed, near the road, a shaft has been sunk to the depth of 100 feet, and levels have been run in different directions through the clays, ochres and ores. A pump worked by the steam engine, 870 feet distant across the road, keeps this portion of the mine dry. From the whole mine on the north side of the road, 130,000 tons of ore have been taken.

The *Chauncey Leet bed*, on the south side the road, extends over some fine meadows, that have been long under cultivation, and whose deep soil concealed the ore below. A shaft was sunk in one of these fields in 1846 by Mr. Alger to the depth of 100 feet, and a steam engine was put up to drain the mine. Excepting a stratum of hematite about six feet thick near the surface little ore was found in this

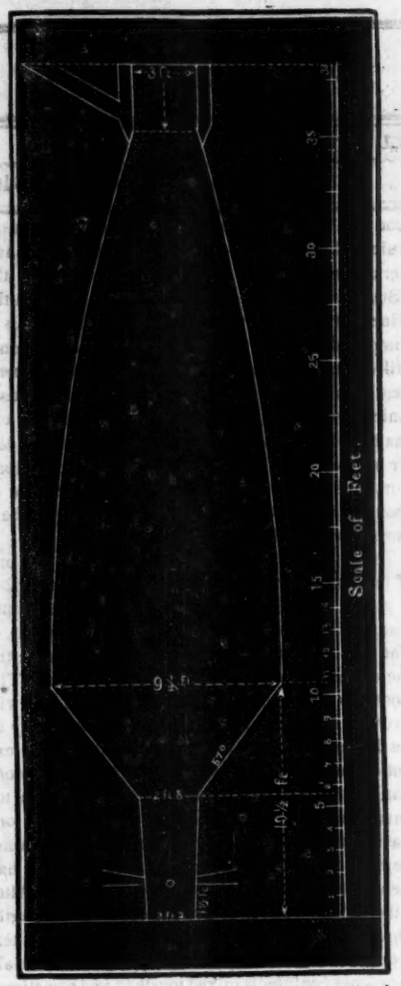
shaft, the ground being clay and ochre. Levels run at different depths struck large bodies of ore, however; and surface excavations to the southwest revealed extensive deposits. At one place it was found in a solid mass near the surface, so that from a shaft 40 feet in diameter and 47. ft deep 4000 tons of good ore were extracted: this is equivalent to one ton to 14¼ cubic feet. If perfectly solid, one ton of this ore would occupy about ten cubic feet, its specific gravity being 3·75. At this spot another large excavation is laid out, which promises to be more systematically conducted than the other—the walls being carried down by slopes, and the rubbish all removed to a proper distance. In some parts of this excavation the ore presents a breast of 40 to 80 feet in thickness, dipping from 35° to 45° towards the southeast. Whether the lowest stratum is reached is uncertain. Clays, gravel and ochre here lie between the ore and the limestone: but in the other mine the ore is often found in close contact with this rock. At its southern extremity the limestone ridge flattens away somewhat, the dip of the strata is less and the ore seems to give out. Whether this may not curve up again and be found occupying a synclinal trough between the limestone and the mica slate ridge which rises on the east side, is a matter to be determined by future operations. Some loose ore, it is said, is found on the slopes of this mica slate hill. But until shafts have been sunk to a much greater depth than any yet projected, there seems to be little prospect of arriving at any clew to the limits of this bed. Already about 30,000 tons have been extracted from these fields, the deepest excavations (excepting the engine-shaft) not reaching below 60 feet from the surface. When examined this spring by Prof. Hall of Albany and myself it seemed safe to us to calculate on 400,000 tons of hematite on the south side the road within the first hundred feet of the surface. The preparations made by Mr. Alger for its removal are such that he can raise at the rate of 1000 tons a week. This is in anticipation of the establishment of anthracite furnaces at Hudson, as well as for the supply of furnaces near the Housatonic road in Connecticut and the Stockbridge furnaces.

The quality of this hematite is unsurpassed by that from any other mines; and the iron made from it, whether grey pig for foundry purposes, or hard iron for puddling, is found among the very best qualities produced from any ores.

The cost of raising it in the old Leet bed is about a dollar a ton; in the Chauncy Leet bed half this sum will pay for mining, as well as the additional labor of washing the fine ore. A little stream winding through the meadow near the shaft affords water for this purpose, and the engine itself supplies more from the bottom of the mine. This wash-ore is used without roasting, mixed with the roasted lump ore.

The furnaces are in the southwest corner of the town of Stockbridge on the Housatonic river. By an addition made to the old dam in 1847 the whole river is backed nearly half a mile, affording a large reservoir and a fall of 21 feet. The water carried from the plume in an iron pipe comes up under a Scotch motive wheel, causing it to revolve with 100 horse power. The shaft carries at its top a horizontal toothed wheel, which drives two other horizontal wheels, and these, by an upright pin acting as a crank, work the two pistons of the blowing cylinders. These cylinders of cast iron, five feet diameter and four feet stroke, connect with a globe regulator of boiler plate iron strongly riveted together, whose diameter is 16 feet, and capacity somewhat over 2000 cubic feet. From this the blast pipes lead to the hot air chamber back of the tunnel head; where by the admission of the escape heat the blast is heated, or by its exclusion (by the interception of a gate or valve) the air passes through cold and so down to the tweres.

The furnaces stand side by side—only three feet apart at the base: they have the same casting house, and the top-houses are on one platform—one bridge answering for the two. The new furnace is 38 feet high, and 9½ feet across the boshes; the old one six inches less in each of these dimensions.



The hot air chamber back of the tunnel head of each furnace, is provided with ten tons of iron pipes for heating the blast. They consist in each of two bed pieces a foot in diameter and nine and a half feet long, pierced with fifteen holes for as many uprights to each one. These upright pipes are of oval form, nine inches by three and a half inches—outside measurement—and nine feet long. At the top each pair is connected by another piece in the form of an arch or semicircle. The two bed pieces lie parallel to each other two feet apart and extend through the oven: the two parallel rows of arched pipes stand upon them, and reach to the height of about ten feet. The blast passes in at the end of one of the bed pieces, and then circulates through all the upright pipes; which by their oval form present a large surface to the flame playing between them. Finally the air passes out through the other bed piece at the opposite end from which it entered—and then by two pipes set between the lining of the furnace and the outer wall is led down to the twere arches, and go into the furnace. This arrangement for keeping the blast at an equable temperature is a plan of Mr. Alger's, for which he has received letters patent. The effect is found to be very decided in increasing the temperature of the blast also, as has been proved by trials made at the tunnel head and the tweres of pipes so arranged and of those brought down in a casing of brick outside the stack. This must certainly be the case when cold winds are allowed to blow upon the brick casing, or rain and show to fall, melt and evaporate upon it. The pipes are so placed that no inconvenience is caused by their contraction and expansion, and that they can be taken out and replaced without disturbing even the lining. One set has been in use eight years without requiring any attention.

The furnaces for the most part have been blown with hot blast; but iron made with cold blast, whether it is really better or not, bringing a considerably higher price, one of the furnaces is sometimes worked cold to supply this demand, though with less production and greater consumption of stock. The tables below give the details of supplies of ores, fuel, blast, flux, etc., together with the daily production at different times. They are copied from the furnace journal, which has been regularly kept in this form for more than ten years.*

Considerable care is given to the sorting and cleaning of the ore, and the large lump ore is always well roasted; the charges are weighed, not measured, as they are put into the furnace. When the furnace is working hot and the hearth is large, after being worked sometime, the production is then greater, and consists of forge pig—running slow with less blast, the iron is soft grey suitable for the strongest castings. The hearth seldom lasts more than a year. At present one of the furnaces is out of blast, and the other will soon stop until some improvement has taken place in the iron market.

Vandeusenville Furnace.—This has been referred to before as belonging to the Richmond iron company. It was built fifteen years since at the village of Vandeusenville, a part of Great Barrington, on a branch of the Housotonic, and only a few rods from the Housatonic railroad. John Coffing, Esq., formerly of Salisbury, Conn., has for several years had charge of the establishment, and has carried on a successful business. The ore is brought in wagons from West Stockbridge, a distance of about eight miles, at a cost of $1 12½ a ton. Adding to this one dollar for mining, and thirty seven cents ore-leave, it stands at the furnace at $2 50 per ton. Charcoal is estimated to cost $6 25 per hundred bushels. The furnace makes six tons of hot blast pig iron daily, with consumption of 150 bushels of charcoal to the ton. Its cost, delivered on the railroad, is from $19 to $20; to which when sold are to be added freight, commissions, guaranty, storage, etc.

The whole number of furnaces above described in Massachusetts is seven. Five of these make about 1500 tons each per annum—equal to 7500 tons. The two Stockbridge furnaces, when both run, make at a greater rate than.....4500 tons. The capacity then of the Massachusetts ——— furnaces may be estimated at.....12,000 tons.

A table containing the cost of ores, fuel, transportation, etc., at these furnaces will be given at the close of the account of the Connecticut furnaces—the table including these also and the hematite furnaces of New York.

* The tables will appear in our next number.

Notes of Travel.

Detroit, June 10, 1849.

In passing from Albany to Buffalo, we were greatly struck by the changes produced along the line of the railroad during the last three years. Every place had made rapid progress in improvement; small towns had grown larger, larger ones had become cities; and cities were more altered than all by the great extent of their improvements. Even the railroad itself, over which we used to think ourselves fortunate to be carried in twenty-four hours, has shared in this spirit of progress, and now transports its passengers in sixteen hours, which is at the average rate of twenty miles an hour. To Utica, the first hundred miles, a double track is laid nearly all the way. This is soon to be completed and extended through to Buffalo. More comfortable cars are placed on the line, particularly for night travel, so that the fatigue of the journey now is little more than of that from Albany to Boston;

On the south, the Erie road steadily progresses westward, and as it goes on, branches are projected interlocking it with the southern line of roads. Before it reaches its western terminus, this terminus will have moved farther along the shores of Lake Erie, and the fine boats, that move on its waters, like those on the Hudson, will soon find they have swift competitors on the land. The change of improvement goes on with constantly accelerated force. Each new road is the trunk from which springs many branches; and here no blight seems yet to have fallen upon them to check their growth.

In this beautiful region of central New York, a new element of prosperity has of late been introduced of little less consequence to its farmers and land owners, than its long line of canals and railroads. There are its plank roads, a notice of which has already appeared in a previous number of the Journal. Though of humble pretensions compared with the iron roads, they promise to be of incalculable benefit to the state. Over one lately finished to Albany, recourse is had to extensive timber districts formerly too remote for their products to be of any value, excepting their bark trade from their trunks for tanning. This stripped off, like the hides of the buffalo and the deer in western prairies, the body was left to rot, too remote for removal. But now a portion of these fine hemlock trees are sawed into planks and laid as a road, it has given a value to wide forests, whose products will no longer be esteemed a mere nuisance to be got rid of by fire and slow decay. No less than seven of these roads are either completed, or are in progress of entering the city of Utica. One of these is eighty miles long, extending into the wild territory of St. Lawrence county. Some of these roads will ere long open a way to more of the wonderfully rich and productive iron mines of this region, an account of which will appear in due time in the pages of the Journal.

Farther west, the rich clayey soil of the limestone lands is quite unsuitable for good roads, and plank roads here being found cheaper than macadamising, they are covering the country. It is not a little strange that with the materials always at hand, and the process so simple, we should never have discovered this use of them; but finally at this late day be indebted to the Russians for their application.—So it is, if we are at times astonished by our progress, we seem nevertheless to be but beginning to learn the uses of things; and a few hundred years hence we shall be looked back upon as only just emerging from the abyss of savage life, which now seems to be so immeasurably behind. How we should prize the gift of a glimpse into that future! But it is only with the present we now have to do—To join our feeble strength to that our fellow men to push on the work of progress—to level the mountain and build up the plain—to make the crooked straight and the rough places smooth—to add to the comforts and convenience of all—to bring all men nearer to each other, and develope to their full extent the hidden resources of nature for their use and the glory of Him, who so skilfully provided and arranged them. With this spirit let us watch the work as it goes on, encouraging and aiding our fellow laborers.

With its fertile fields and internal improvements the interior of New York is treading close upon the heels of its neighboring New England States, who could boast of few natural resources but rocks and ice and water power. Its fine soil, its salt wells, its gypsum, its iron mines and its springs have secured to it a rapidly increasing and industrious population; while its boldly projected canals and railroads have made it the principal thoroughfare between the great east and west. Its towns, mostly new, have been planned, laid out, and built up with much uniformity of structure and have consequently escaped those deformities common to the slow growth of more ancient places, whose extent and importance was unforeseen and unprovided for. We were particularly struck with this at Canandagua, where without any particular object we stopped one night to take the morning train to Buffalo. To our surprise, we found ourselves in a town of extraordinary beauty and freshness. Its houses seemed to have been built simultaneously, and were all surrounded with gardens of shrubery, all displaying a highly refined taste and ample means for its indulgence. The contrast between the dull walls of the city with its hard pavements, and the fresh grass of the fields and the green foilage of the trees was most striking. There we had left a long and tedious northeasterly storm.—Here the sun sank clear into the west and the moon rose full and bright, sending her clear rays over the neighboring lake and town and fields. For hours we wandered up and down the streets and into the country, enjoying the sweet influence of the scene.

Buffalo, we found, had not been behind the other places in its progress. In the Commercial Advertiser, the reported arrivals from various ports on the lakes above, from Saturday to Monday noon previous, were 13 steamers, 5 propellers, 1 bark, 8 brigs, and 70 schooners, freighted with 200,000 bushels of wheat, 180,000 bushels of corn, and 24,000 barrels of flour, besides other provisions and lumber. By the enterprise of the Boston capitalists, who direct the Michigan Central railroad, the old "combination," that has ruled for years the lake boats, has been broken up, and an independent line of first class steamers is now running between Buffalo and Detroit at prices, against which the combination itself cannot compete. Its fine boats have had their day, and must now take their turn to give way, as many other boats have before them. The railroad company take their passengers directly across from Detroit to Lake Michigan in ten hours, a distance of 218 miles, and thence by another line of their boats to Chicago, 35 miles farther. From Detroit to Chicago by steamboat it is 729 miles;—but as the railroad boats leaving Buffalo in the morning go direct to Detroit, and the other boats stop at the intermediate ports on the south shore, the whole distance by the one route from Buffalo to Chicago is estimated at 518 miles, and by the other 1,056, making a difference of 538 miles, and a saving of time of from 2½ to 3 days in favor of the Michigan Central railroad. The boats of this line leave Buffalo every morning and evening, and the time of the morning boats is 16 hours, of the others stopping at Erie and Cleveland, 24 hours. On Lake Erie the railroad company have six boats, and on Lake Michigan four.

We were so fortunate as to meet the new boat May Flower, Captain Van Allen, and secure a passage in her to Detroit. Though familiar with the magnificence of our eastern boats, and not unacquainted with the fine boats that have before plied upon these waters, we were not prepared to see one quite equalling the best qualities of all others, and in some respects superior to any thing we have seen elsewhere. She was built the last winter at Detroit by Mr. J. Lupton from New York, J. W. Brooks, Esq., Superintendent of the railroad company, having general charge of her construction. Her marine timbers are bound together with iron bars, interlaced one with another in such forms as to give greater strength to her frame, than has ever been attained before. Every stick put into her and every bar is of the very best quality;—indeed it seems with every thing on board that the question was not whether this and that will answer, but whether it is the most substantial and excellent of its kind. Her dimensions are—length 290 feet,—35 feet beam—13½ feet hold—extreme width 65 feet on deck. The engine occupies the centre of the boat, and the machinery passes up through the decks breaking the continuity of the long upper saloon, which but for this extends nearly the whole length of the boat.—On its sides are the state rooms, about the middle of the boat in a double row on each side, the berths arranged athwart-ship, and doors opening at each end of the state rooms, which stand in single row. Twenty-five stern rooms in the after saloon are furnished in the perfection of neatness and good taste as quite spacious bed rooms, with bedsteads instead of berths. The whole number of state rooms on the upper deck is 85;—all are provided with hydrants for draining water and escape pipes for conveying it off, a convenience we have not seen in other boats. On the main deck is a smaller saloon aft with six spacious elegantly furnished chambers, called bridal chambers, on each side. We had not the felicity of occupying one of these. Under this is another cabin with 150 berths, and aft of this a sort of nursery room, furnished with baby jumpers, cradles and such things, with which we do not profess much acquaintance, and in fact from this being associated with sundry disagreeable sounds, we think good judgment has been shown in locating the repository of these babies, no doubt the same good judgment has provided thick double walls between this room and the 150 berths of the lower cabin. Nor have the accommodations for the steerage passengers forward been neglected. Their cabin is spacious and well provided with beds, well lighted and well ventilated. Rooms for a variety of purposes are found along the main deck, each department, whether of cooking, of baggage, of lamps, of porters, having its separate quarters. There is even a room for the carpenters, one or more being attached to the boat, and constantly employed on her trip.

The engine was built at the West Point Foundry, and was put up by Messrs. Hogg & Delamater, of New York. The steam cylinder is 72 inches diameter—length of stroke 11 feet. The wheel is 36 feet diameter, and its buckets 11 feet long. There are 3 boilers 9½ feet diameter and 30 feet long, weighing over 65 tons. This heavy machinery works with great smoothness and power, propelling the boat with greater speed than any other boat on the lake. In a late trip she made the distance

from Buffalo to Long Point, 75 miles, in 3 hours and 27 minutes, which is at the rate of 22 per hour.

All her equipments, like those described, are of the best that could be had; "rich but not gaudy" seems to have been the rule in furnishing the boat; and a delicate taste moreover is seen in the fresh flowers, placed here and there, pleasing the sight and the smell even in the midst of the rich vivands that bountifully set forth the table. In the engine room even they were seen around the engineer as he reclined on a luxurious sofa, and one of the brakes of the engine carried a beautiful nosegay up and down, till it drooped and faded. But who will attempt a description of the luxuries of the table, of the perfect cooking and the variety of excellent things? Such provision is altogether new on steamboats, and at hotels is only to be found at Warrener's. The desert even he might not have disowned. If this fare be continued, we should not be surprised at its giving a kind of popularity new to steamboats, and adding not a little to their patronage.

The boat, we suppose, was named for the May Flower of 1620—not certainly for their resemblance in convenience and comforts—perhaps because each is employed in transporting emigrants to a western shore. A painting hangs in the saloon representing the landing of the Pilgrims, on what poets and painters will persist was "a rock-bound shore;" but which all who have seen it know was a sandy beach with a few scattered boulders, on one of which our Pilgrim Fathers stepped from their boat. To one who grew up in sight of *the* rock, these representations, though often firm and fanciful, seem like caricatures of the fair harbor and smooth shores of Plymouth.

Such is the beautiful boat it was our good fortune to meet in these western waters. May she long grace them; and if the May Flower be ever surpassed, as she has surpassed others, her rival certainly will be a May Queen of wonderful perfections.

It was our intention to have added some account of the depot of the Michigan Central railroad, that has sprung up along the bank of the river at Detroit, covering a length of the sixth of a mile with its spacious and well planned buildings. The freight depot, a fine brick building, has a front of 800 feet along the dock. All these improvements have quietly gone on under the management of Mr. Brooks, and reflect great credit upon his judgment and skill as well as upon the company for their enterprise.—But these remarks have already extended over too much space; and we reserve an account of the road until we pass over it, as we may on our return from the upper lakes. H.

Mechanics.

No. 2.

One hundred years since, had any one predicted the improvements which have been made in mechanics within that period, he would have been considered insane; and even scientific men at that time, would have treated the notion as the dreamy offspring of a visionary brain. It is true that the power of steam had been discovered prior to that period, and even the steam engines of Savery and Newcomen had been invented: but it was not till the year 1769, that Watt finished his invention of the steam engine as it now is in all its essential principles, and thus presented to the world the noblest and most valuable machine ever produced by human genius. The scientific world had speculated for centuries on the subject of steam, and, while apparently amusing themselves with unimportant experiments with it, seemed to entertain a notion that it might be applied to some useful purpose. But they advanced not a step towards the discovery, till Savery, and then Newcomen, took up the subject, and produced their imperfect machines. It was left for Watt, a practical mechanic, and a self-made man, to perfect the discovery; and almost every subsequent improvement on it, up to this time, owes its origin to a like source.

It is only one hundred and eleven years since the first patent was enrolled in Great Britain, for spinning cotton by machinery. This machinery was extremely defective, and soon laid aside; and it was not till 1767, that Arkwright's mode of spinning which still continues in operation, with some modifications, was brought into use. Arkwright was a barber, and owed little to scientific training. The cylinder card, an approach to that now used, was invented at about the same period, and the mule about the year 1775. The first successful attempt at the introduction of the power loom, after repeated failures, was made in 1803, the dresser having been previously invented, though in an imperfect state.

Now contemplate the enormous extent and importance of the cotton manufactures in Europe and the United States. Think of the millions of wealth annually created, the multitudes of persons employed, the great and innumerable public improvements which have sprung from their introduction. All these are the growth of less than a century, produced by that all prolific agent, mechanical science, aided by genius and industry. Since the introduction of the above inventions, the work of improvement has constantly advanced. There is at the present day, scarcely a machine in use in the cotton factory, which dates back to the period alluded to, but has undergone so many changes for the better, that it scarcely resembles its original self, while many new and important ones have been introduced. The results have been, much saving in labor, increase of product, improvement in the quality of the manufactured fabric, and great reduction in prices. On these subjects, however, we shall speak more particularly, and at large, in another place.

Reader, if you are fond of the mechanic arts, and if your recollection can carry you back some thirty or thirty-five years, just make a pilgrimage among the workshops of our modern mechanics, and observe and compare the present with the past. You have seen men working for days, perhaps weeks, with hammers, chissels and files, to produce a smooth surface, imperfect at last, on a piece of cast iron. Who ever then thought of planing such a body? See, now, the workman, with arms folded, looking on, watching the movements of the modern machine, which, in a comparatively short space of time, and without the aid of human hands, performs the work in a manner that hands, hammers, chissels, and files, could never equal. There are the turning engine, the screw cutting engine, the engine for cutting gearing, the power punch, the machine for planing boards and planks, the machine for turning shoe lasts and gun stocks; in short, there is an indefinite, we had almost said infinite, host of machines of modern invention, most of them not yet thirty years in use which seems almost to have sprung up by magic of which former generations never dreamed, and which have effected the most astonishing changes in almost every mechanical operation. For all these things—for the vast improvements that have resulted from them in the productions of the mechanic arts, the relief they afford to the physical powers of the operative, the reduction they make in the cost of almost every necessary or useful manufactured article, and for the vast wealth thereby created, the world is indebted, almost entirely to mechanical genius o the practical mechanic, who, by constant practice and observation, learns the defects of one machine, and the want of another, and sets about the work of improving the defective, and creating a new one to supply a deficiency. It is in this way that most, if not all, the really important mechanical inventions of the present generation have sprung into being. I propose to speak more of this hereafter. C. T. J.

Mississippi Floods.

Mr. Editor:—The ground I take in considering the question of the Mississippi floods is this: Firstly, that the two measures proposed to effect the drainage are, as shown in last week's letter, the one a cure of temporary result, the other a preventative of impossible application, and both either mediately or immediately destructive to the very interests they pretend to serve: Secondly, that the health and prosperity of the Southern States of the Union demand at any cost a bold comprehensive measure for the permanent prevention of these pestilential and ruinous inundations.

The Red river, watering an area that forms a very considerable item in the whole basin is a tributary to the Mississippi. At the point of junction the latter, laboring to rid itself of the accession, *begins* to throw out on each side of its course auxiliary channels of discharge. The incapacity to pass *off the additonal volume* is further seen in the fact that the Red river pent up by the back-water of the Mississippi endeavors to discharge itself into the sea by other outlets, Bayou Roberts, Bayou Bocuf, &c. At the south of the Red the Atchafalaya jets from the extreme point of a very remarkable bend in the Mississippi, and following a course that, in *the same straight line with the Red, forms a tangent to his bend* flows into Atchafalaya Bay. The physical features of this junction of these three rivers, so far as these features can be learned from a map, make it probable *that the Red river has not been always tributary to the Mississippi*, and this probability is said by a man of high scientific attainments in this city to be still farther sustained by geological evidence. The Red river is the key of the drainage of the Mississippi.

Bayou La Fourche taps the Mississippi at a point a little above Donaldsonville. This has been very much reduced in its discharge in consequence of works by which its issue from the Mississippi had been stopped by the American Army in 1814. The Legislature of Louisiana, whatever may have been their ground of objection, have rejected more than one application to clear this Bayon. The Ibberville river, or as it is sometimes called the Bayou Manhac, which emptied itself into the sea through Lake Pontchartrain, had also tapped the river at a point some ten miles below Baton Rouge until the military operations previous to the battle of New Orleans obliged General Jackson to cut of the communication. The Ibberville river has in consequence ceased since that time to be a channel of discharge from the Mississippi. In connection with the daming of these two taps, the Ibberville river on the one side and the Bayou La Fourche on the other, though I am not in a position to state any other particular bearing on the result, it may, however, help our views in the case to remark that the highest flood ever known in the Mississippi valley occurred in about eighteen months after the construction of the dams—in the summer of 1816.

The cause of floods is of course a disproportion at periods of maximum supply between the capacity of a river and the area of its basin. The preven-

tion of them lies consequently in reducing these conditions to their proper relation, and this may be effected in some cases by lessening the area of supply, in others by increasing the capacity of discharge.

The measure I propose for effecting the drainage of the lower valley of the Mississippi is this: First, in order to lessen the rain-basin I would direct the Red river into its ancient bed, if an engineering examination of the ground should not lead to some strong practical objection. Secondly, with the view of increasing the capacity of dischage, I would remove all obstructions along Bayou La Fourche, and carry out such other works as may be necessary within the proper limits of outlay, to make that channel draw off the greatest possible quantity from the volume of the Mississippi; I would open up and improve in the same way the Ibberville river, now useless, and if all these measures should be found, on careful survey, either injudicious or insufficient, I would make a new cut of the necessary section from a point above New Orleans into Lake Ponchartrain.

The diverting of the Red river will I think prevent of itself any floods in the Mississippi. This may be effected without placing any obstacle whatever to navigation as it exists, and at the same time be made the means of improving the drainage of the country along its course from the junction with the Mississippi to Atchafalaya Bay. Turning the Red river will lower the level of the Mississippi for miles above the present junction, and draining the whole valley of that river from the latter point to the sea, the good effects will extend over a greater space, and consequently by increasing the area of benefit diminish the pressure of cost.

The improvements proposed to be made in Bayou La Fourche while giving greater facilities to navigation may be made to effect a proper drainage of its own district, and the same may be said of the Ibberville river which will be raised by the works recommended to the condition of a navigable watercourse. The introduction of this outlet from the Mississippi is no innovation on Lake Pontchartrain, seeing that at present the course of nature in the case is merely suspended. But the new channel from the Mississippi to the lake is the part of the scheme most likely to meet objection, and I had, therefore better consider here two objections urged against it by an advocate of levees: First, in reference to the Mississippi, that lowering the flood-level will lead to the formation of shoals and bars. Second, in reference to Lake Ponchertrain, that connecting it with the Mississippi will flood the surrounding country, and by accumulations of deposit destroy its navigation.

In the first place let us enquire whether the waste course I have suggested will cause the Mississippi to shoal up. The Bayou La Fourche has continued to stand for centuries in precisely the same relation to the Mississippi without causing any such consequence. The whole surplus waters of the Nile were impounded year after year for centuries in Lake Meoris, and yet the feeder that supplied the lake, tho' drawing off this immense quantity 4 or 5 months produced no injurious effect on the condition of the river. The Leak, which discharges a large proportion of the waters of the Rhine into the River Meuse is the identical Fossa Corbulonis of the Romans, an artificial channel cut for military purposes by Corbulon, and yet though it has been tapping that river for centuries, we find no shoaling up of the Rhine placed to its account. These, therefore, prove that within certain limits the waters of a river may be diverted without injury to the principal channel. The waste-course I propose is addressed solely to an extraordinary freshet, and the mere prevention of an *extraordinary* freshet interferes in no wise with the *general conditions* under which the river has maintained itself since creation. To say that drawing off *any* of the water will effect the bed of the river were to say these things: that if the river overflow it will shoal up; that therefore higher levees are necessary to prevent shoaling-up; and that the great agent of *progressive* geography, namely high floods, is after all the best conservator of *existing* geography.

A water-course is the result of a certain combination of natural causes, the general relation between these causes or in other words the general conditions of the water-course, establishing what engineers call its *regime*. Now I should be very slow to suggest an alteration of this balance, as fixed by nature, but in speaking of the surplus waters of the Mississippi, I regard extrordinary freshets not as the rule, but as the exception. The preservation of the established regime is necessary to the maintenance of the channel, and therefore unusual floods often altering materially the depth the width, the direction, are disturbing causes and so far I say in preventing the recurrence of these floods we rather avert than incur a danger.—Again, the maxim of all experience in hydraulic engineering is simply this: Follow nature. Now we have seen the superabundant water of the Mississippi leaping upon the levees, threatening to overflow the flats, and calling out plainly enough that if an outlet were not selected for it 'twould take the matter into its own hands. Has it not carried out its threat to the letter? Therefore I say it is perfectly clear that in giving the surplus waters of the Mississippi vent through such a cut as I propose we merely give physical expression (if I may speak so) to the wants and wishes of nature. I may add to this argument the evidence of my own experience. Years of my life have been spent in the closest professional observation of rivers, and I feel therefore that to the mind of any engineer who has of course been taught by his practice to look closely at nature—to *feel* what is in keeping with her will, these brief arguments support my suggestion fully, so far as it effects the navigation of the Mississippi.

2d. Will the cut I have suggested injure the navigation or the drainage of Lake Pontchatrain? In the first place will Lake Pontchatrain shoal-up? It is necessary only to refer this question to the countless instances in which rivers charged with all their deposit have emptied themselves into lakes since the beginning of time. All lakes have a tendency to fill up with disintegrated matter, whether they do or do not receive rivers, and indeed the introduction of a water-course into a lake would seem a preventative to this, seeing that the moving volume by what is called the lateral communication of motion in fluids, sets the whole body of the otherwise dull lake moving more or less briskly with its deposit through the outlet. The lateral communication—the rush occasioned in a body of still water by the introductron of a running stream through it, is so very great that M. Venturi has applied it with success in draining, as Dr. Brewster says, "by means of a fall of water without the help of machine a piece of ground, even though the ground should lie on a lower level than the established current below the fall." Besides the cut I propose will bring into Pontchatrain at the most but some few feet vertically of the surface water of the Mississippi, and every one knows that while fluid motion pushes deposit forward gravity draws it downwards, the large and heavy matter rolling along the bottom while *the particles moving along the top are small and light.* Therefore the cut I propose does not admit into Pontchatrain water from the Mississippi charged with deposit, but admits it in pretty much the same condition as if this deposit had been strained off.—Further, if it should be found necessary or judicious, the mechanical arrangement of the cut may be made to prevent any deposit whatever from passing over even the first regulating weir.

In the next place the effect of my cut—a channel of entrance—on the level of Lake Pontchatrin is regulated by of course the relation of that channel to the channel of issue. But I am not in a position to state dimensions for this cut, seeing that these depend on the capabilities of the Bayou La Fourche, the Ibberville river and all the other outlets tapping the Mississippi; besides, in the event of the turning of the Red river being found practicable, this cut into Pontchartrain will most likely be found unnecessary. This objection, therefore, cannot be decided either way without further particulars. The maximum height of the water, the declivity of the borders, the plan-line of the maximum flood, the section and grade of the debouching channel, the high-tide level of Lake Borgne, are all still necessary to show whether Lake Pouchatrain will admit of an increase of head. If injury to property should follow from raising the level of Lake Pontchartrain, the question will become, as in morals, one of choice between a certain amount of evil and a certain amount of good.

In stating my views on the mississippi I have been obliged, in the absence of any engineering particulars of its channel or district, to speak more loosely than could have been wished; and as this has deprived my remarks of the point and force of things defined, I beg leave to urge here the advantages to the Southern and Western States of a careful topographical survey throughout all its ramifications of the River Mississippi. Hoping that I may have done something in my first letter towards forming correct views as to the question of 'levees' and 'cut-offs,' and that in this I may have succeeded as I believe, I have, in pointing out the true measure for the prevention of a great draw-back on the progress of the Mississippi valley.

I have the honor to be,
your very obedient servant
M. Butt Hewson, Civil Engineer.

Milwaukie--Progress.

In the fall of 1835, a passenger on board a schooner, freighted with lumber, we landed at Milwaukie. It was a beautiful spot of earth, but its name was then "unwritten" upon maps. With the exception of Indians, Solomon Juneau was the only permanent resident of the place. He was an Indian trader, an enterprising, benevolent and most hospitable man, and has since been Mayor and Postmaster of the *city* which he planned.

There were two or three log cabins, the country around wild yet lovely, and in company with sixteen others, we slept upon some loose boards in the first (then unfinished) frame building in Milwaukie.

This spot, then far beyond the borders of civilization, is now a flourishing city of some 16,000 people; the territory of Wisconsin, then of recent geographical existence, is now a State with its Senators and Representatives in Congress. This personal reminiscence was suggested by the notice of the erection of a splendid Hotel in that young city, the dimensions of which will be 120 feet square, five stories high, the dining room to 65 by 35 feet; to contain 157 apartments, every one of which will be provided with one or more ventilation flues, and in this respect will be superior to any public house in the United States.—*Cincinnati Gaze.k.*

Railway Share List,

ON A PAR OF $100 ACCORDING TO THE LATEST SALES.—CORRECTED EVERY WEDNESDAY.

NAME OF COMPANY.	Length of line.	Length of branches.	Miles finished.	Cost of road and equipment.	Cost per mile.	Capital st'k paid in.	Debts more than surplus.	Ruling grade.	Earnings 1848.	Expenses 1848.	Net earnings 1848.	Rate of dividend in 1848.	Price of shares.
Atlantic and St. Lawrence	146	....	36	In progress	.....	.....	.....	..	.....	.....	.....	.....	78 a 81
Androscoggin & Kenneb.	55	....	6	In progress	.....	.....	.....	..	.....	.....	.....	.....	70
Albany and Schenectady.	16½	....	16½	$1,606,190	100,000	.....	.....	..	.....	.....	.....	1 5-9	89
Auburn and Rochester...	78	....	78	2,644,52	34,000	.....	.....	..	175,922	.....	.....	8	86a87
Auburn and Syracuse....	26	....	26	1,125,88	43,300	.....	.....	..	454,721	.....	.....	2 9-10	80a81
Attica and Buffalo.....	31½	....	31½	821,31	26,000	.....	.....	..	172,185	.....	.....	4½	.....
Alleghany Portage.....	36	....	36	.....	.....	.....	.....	..	150,959	.....	.....	.....	Leas'd to Western railroad.
Albany and W. Stockb...	38½	....	38½	1,924,701	50,000	.....	.....	..	.....	.....	.....	.....	
Annapolis and Elkridge..	21	....	21	.....	.....	.....	.....	..	.....	.....	.....	.....	
Bangor and Oldtown....	11½	....	11½	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Boston and Lowell.....	25½	1½	27½	2,013,687	73,200	1,800,000	.....	10 up, 30 down.	461,33	268,707	192,631	8	118¼
Boston and Maine.....	71½	5	79½	3,571,83	45,000	3,249,804	249,715	47½	511,627	264,534	247,89	8½	01a102
Boston and Worcester...	4	22	66½	4,960,00	74,700	4,500,000	460,000	40	716,28	406,303	310,08	8½	106
Boston and Providence...	41	6½	47½	3,031,10	63,800	2,893,300	26,878	37½	354,37	183,361	170,01	6½	95½
Bost., Concord and Mont.	90	....	38	In progress	.....	.....	.....	..	.....	.....	.....	.....	82a85
Berkshire.....	21	....	21	600,00	28,500	.....	.....	..	.....	.....	.....	7	.....
Buffalo and Niagara.....	22	....	22	250,396	11,500	.....	.....	..	60,014	.....	.....	6 1-3	.....
Buffalo and Black Rock.	3	....	3	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Baltimore and Susqueh'a.	36	....	36	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Beaver Meadow.....	26	....	26	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Buck Mountain.....	....	....	4	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Baltimore and Ohio...	....	....	178	13,136,940	61,900	.....	.....	..	1,468,828	805,530	663,198	.....	43¼a44
Washington Branch.	....	....	31										
Frederick Branch...	....	....	3										
Calais and Baring.....	3	....	3	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Concord	34	....	34	.....	.....	1,350,000	.....	..	311,326	180,699	130,63	.....	121
Cheshire.....	54	....	54	2,584,143	48,000	1,453,379	1,140,764	60	.....	.....	.....	.....	65
Connecticut and Passump.	115	....	40	.....	.....	.....	.....	..	.....	.....	.....	.....	85
Connecticut River.....	50	2	52	1,588 184	30,500	1,234,970	426,013	32	165,24	95,658	69,58	8	96¼
Cape Cod Branch.....	28	....	28	587,116	20,900	343,000	217,395	40	.....	.....	.....	.....	62
Corning and Blossburgh..	....	....	40	.....	.....	.....	.....	..	18,069	.....	.....	.....	.....
Cayuga and Susquehanna	29	....	29	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Camden and Amboy...	61	..	96½	3,200,000	33,000	.....	.....	..	.....	.....	.....	.....	140 a 142
Trenton Branch.....	6½												
New Brunswick Br..	29												
Columbia.....	82	....	82	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Camden and Woodbury..	9	....	9	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Cumberland Valley.....	....	....	52	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Carbondale & Honesdale.	26	....	26	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Chesterfield.....	12	....	12	150,000	13,500	.....	.....	..	.....	.....	.....	.....	.....
City Point.....	9½	....	9½	195,867	15,919	.....	.....	..	.....	.....	.....	.....	.....
Central of Georgia.....	191	....	191	3,222,289	16,800	.....	.....	30	516,252	266,450	250,22	.....	80
Central of New Jersey...	63	....	36	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Dorchester and Milton...	3½	....	3½	114,224	35,100	72,990	41,234	39	.....	.....	.....	.....	.....
Detroit and Pontiac.....	25	....	25	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Eastern.....	54	19½	73½	.....	.....	.....	.....	40	.....	.....	.....	8	104a105
Essex (Salem to Law.)...	22½	....	22½	421,574	18,700	263,746	160,958	55	.....	.....	.....	.....	.....
Erie and Kalamazoo.....	33	....	33	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Fall River.....	42	....	42	1,145,982	27,300	1,050,000	83,177	45	184,344	109,390	74,95	7½	87½
Fitchburgh.....	49½	6½	56	2,945,630	52,300	2,735,910	67,504	..	486,265	286,046	200,219	8½	113½
Franklin.....	....	....	22	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Greensville and Roanoke.	21	....	21	283,917	13,500	.....	.....	..	.....	.....	.....	.....	.....
Germantown Branch.....	6	....	6	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Gaston and Raleigh.....	96	....	96	.....	.....	.....	.....	..	.....	.....	.....	.....	88 a 90
Georgia (Augusta to At'a)	171	....	210	.....	.....	.....	.....	40	477,052	267,172	209,879	.....	121
Athens Branch.....	....	39											
Harrisburg and Lancaster	37	....	37	1,183,257	31,979	609,550	573,707	49	121,350	37,386	83,963	6	96 a 97
Hartford and New Haven	62	....	62	.....	.....	.....	.....	17	.....	.....	.....	.....	104 a 105
Housatonic.....	74	....	74	.....	.....	.....	.....	..	.....	.....	.....	.....	87
Hudson and Berkshire...	31½	....	31½	818,983	26,500	.....	.....	..	.....	.....	.....	.....	.....
Hazleton and Lehigh....	10	....	10	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Jackson and Brandon....	13	....	13	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Lexington and W. Camb.	6½	....	6½	252,680	38,900	.....	.....	55	.....	.....	.....	.....	.....
Lowell and Lawrence....	12½	....	12½	283,248	22,650	.....	.....	45	.....	.....	.....	.....	85
Long Island.....	98½	....	98½	2,173,646	22,100	.....	.....	..	.....	.....	.....	.....	23½
Lockport and Niagara...	23	....	23	221,000	9,700	.....	.....	..	.....	.....	.....	.....	.....
Lewiston.....	3½	....	3½	33,673	10,300	.....	.....	..	.....	.....	.....	.....	.....
Lykens Valley.....	16	....	16	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Little Schuylkill.....	23	....	23	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Louisa.....	50	....	50	474,137	9,482	.....	.....	..	.....	.....	.....	.....	.....
Lexington and Frankfort.	29	....	29	450,00	15,600	.....	.....	..	.....	.....	.....	.....	.....
Little Miami.....	84	....	84	1,513,402	18,000	.....	.....	..	.....	.....	.....	.....	.....
Machiasport.....	8	....	8	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Morris and Essex.....	....	....	45	.....	.....	.....	.....	80	.....	.....	.....	.....	100
Mauch Chunk and R. Run	36	....	36	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Mine Hill & Sch. Haven.	25	....	25	.....	.....	.....	.....	..	.....	.....	.....	.....	136
Mount Carbon.....	7	....	7	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Mt. Carbon & Pt. Carbon	2½	....	2½	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Mill Creek.....	6	....	6	.....	.....	.....	.....	..	.....	.....	.....	.....	.....
Montgomery & W. Point	67	....	67	.....	.....	.....	.....	..	.....	.....	.....	.....	.....

Railway Share List,

ON A PAR OF $100 ACCORDING TO THE LATEST SALES.—CORRECTED EVERY WEDNESDAY.

NAME OF COMPANY.	Length of line.	Length of branches.	Miles finished.	Cost of road and equipment.	Cost per mile.	Capital st'k paid in.	Debts more than surplus.	Ruling grade.	Earnings 1848.	Expenses 1848.	Net earnings 1848.	Rate of dividend in 1848.	Price of shares.	Remarks.
Madison and Indianapolis	86	....	86	.....	.....	.....	.....	..	.....	.....	.....	.....	110	
Mad River and Lake Erie	102	....	102	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Mansfield and Sandusky	....	....	56	$1,106,121	19,70(	.....	.....	..	.....	.....	.....	.....	.....	
Michigan Central	....	....	221	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Michigan Southern	....	....	70	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Tecumseh Branch	10	....	....	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Macon and Western	....	....	101	323,091	6,218	.....	.....	30	140,970	63,243	78,72[illegible]	.....	48a48½	
Mississippi	....	....	30	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Nashua and Lowell	....	....	14½	525,063	36,20(	525,00(	.....	13	169,187	109,599	59,588	10	.....	
Northern (Ogdensburg)	....	....	12	In progress.		.....	.....	..	.....	.....	.....	.....	.....	
" (Concord to Leb'n.)	69½	}	....	2,762,500	34,000	.....	129,97[illegible]	..	408,455	241,370	167,277	.....	75½	
Bristol Branch	12½	}	81½	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
N. Bedford and Taunton	....	....	20	499,065	24,99	400,00(	.....	40	136,151	96,220	39,22[illegible]	6	.....	
Norfolk County	....	....	26	621,488	23,90(	414,25(	.....	35	.....	.....	.....	.....	30	
N.Y. & N. Haven (14 mls.	Har	RR)	62	.....	.....	.....	.....	..	.....	.....	.....	.....	90a91½	
New Haven Canal	....	....	28	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Norwich and Worcester	59	7	66	2,187,829	33,100	.....	.....	32	218,073	170,297	.....	.....	40½	
New York and Harlem	....	....	80½	3,579,567	44,600	.....	.....	..	.....	.....	.....	.....	57½	
New York and Erie	....	....	200	.....	.....	.....	.....	..	.....	.....	.....	.....	62	
New Jersey	....	....	29	.....	.....	.....	.....	..	.....	.....	.....	.....	108 a 110	
Newcastle & Frenchtown	....	....	17	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
N. Orleans and Carrollton	....	....	5½	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Old Colony	37½	7½	45	2,080,903	46,200	1,601,41[illegible]	683,648	40	227,350	139,592	87,757	6½	79	
Oswego and Syracuse	....	....	41	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Portland, Ports. and Saco.	51	....	51	1,350,000	26,400	.....	.....	..	.....	.....	.....	6	95	
Peterboro' and Shirley	12	....	12	208,311	17,300	.....	.....	..	.....	.....	.....	.....	.....	
Pittsfield and N. Adams.	18½	....	18½	447,755	24,000	.....	.....	66	.....	.....	.....	.....	.....	
Providence and Worcester	43½	....	43½	1,873,895	43,000	.....	573,058	26	193,844	83,889	109,954	.....	82½	
Paterson and Hudson R.	16½	...	16½	.....	.....	.....	.....	..	.....	.....	.....	.....	110a111	
Philadelphia and Trenton	28	....	28	.....	.....	.....	.....	..	.....	.....	.....	10	130 a 140	
Philad. Wilm. and Balt.	97	....	97	6,173,851	66,000	.....	.....	..	638,142	382,608	.....	.....	54	
Philadelphia City	6	....	6	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Philad. Germ. and Nor.	17	....	17	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Philadelphia and Reading	93	....	93	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Penn Township	2	....	2	.....	.....	.....	.....	..	.....	.....	.....	.....	38½	
Petersburg	59	....	59	946,361	16,040	.....	.....	..	163,092	87,131	.....	.....	.....	
Ponchartrain	4½	....	4½	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Pt. Hud., Jack. and Clint.	28	....	28	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Rensselaer and Saratoga	25	....	25	661,910	26,400	.....	.....	..	.....	.....	.....	.....	.....	
Ramapo and Patterson	15	....	....	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Rich. Fred. and Potomac.	75½	....	75½	1,474,004	19,459	.....	.....	..	206,858	100,568	.....	.....	.....	
Richmond and Petersburg	22	....	22	877,484	39,886	.....	.....	..	.....	.....	.....	.....	.....	
Sullivan	28	....	28	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
South Shore	11½	....	11½	255,748	22,200	135,935	128,075	35	.....	.....	.....	.....	33½	
Stony Brook	13	....	13	246,659	19,000	216,829	29,189	40	.....	.....	.....	.....	.....	
Stonington	50	....	50	.....	.....	.....	.....	..	.....	.....	.....	.....	55	
Saratoga and Washington	40	....	40	948,372	23,700	.....	.....	..	.....	.....	.....	.....	.....	
Syracuse and Utica	53	....	53	1,968,036	37,060	.....	.....	..	677,671	.....	.....	.....	120 a 121	
Schenectady and Troy	20½	....	20½	659,668	32,100	.....	.....	..	47,025	.....	.....	.....	.....	
Saratoga and Schenectady	22	....	22	331,036	15,000	.....	.....	..	57,018	.....	.....	.....	.....	
Summit	2	....	2	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Schuylkill Valley	14	....	14	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Shamokin	22	....	22	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Swatara	4	....	4	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Seabord and Roanoke	....	....	76½	1,519,140	20,460	.....	.....	..	.....	.....	.....	.....	.....	
S. Carolina Main Stem	136	....	....	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Columbia Branch	....	68½	242	5,943,678	24,500	.....	.....	..	800,073	308,802	401,271	.....	.....	
Camden Branch	....	37½				.....	.....	..	.....	.....	.....	.....	.....	
Sangamon and Morgan	56	....	26	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Taunton Branch	....	....	11	305,085	27,600	250,000	.....	35	108,101	90,485	17,615	.....	.....	
Tonawanda	43½	....	43½	974,865	22,400	.....	.....	..	218,301	.....	.....	.....	.....	
Troy and Greenbush	6	....	6	273,625	45,900	.....	.....	..	60,055	.....	.....	.....	.....	
Tuckahoe & James River	4½	....	4½	69,322	14,999	.....	.....	..	.....	.....	.....	.....	.....	
Tallahasse and Port L.	....	....	26	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Tuscumbia and Decatur	....	....	44	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Utica and Schenectady	78	....	78	3,161,688	40,500	.....	.....	..	795,239	.....	.....	10	123a125	
Vermont and Mass	69	....	69	.....	.....	.....	.....	55	.....	.....	.....	.....	42	
Vermont Central	121	....	69	In progress.		.....	.....	..	.....	.....	.....	.....	49	
Vicksburg and Clinton	....	....	46	.....	.....	.....	.....	..	.....	.....	.....	.....	7½	
Western	117½	...	117½	7,975,452	67,700	.....	.....	83	1,332,068	.....	.....	8	102a102½	
West Stockbridge	2	...	21	41,515	15,000	.....	.....	..	.....	.....	.....	.....	.....	
Worcester and Nashua	45	...	45	.....	.....	.....	.....	48	.....	.....	.....	.....	50a51½	
Wrightsv, York & Gettys.	....	...	13	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Whitehaven and Wilkes.	....	...	20	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Williamsport and Elmira	....	...	26	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Westchester Branch	....	...	10	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
West Feliciana	...	...	21	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Winchester and Potomac.	...	...	32	509,415	15,919	.....	.....	..	.....	.....	.....	.....	.....	
Wilmington and Weldon	....	...	163	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Westminister Branch	....	...	10	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Western and Atlantic	....	...	100	In progress.		.....	.....	..	.....	.....	.....	.....	.....	
York and Maryland Line	....	....	21	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	

AMERICAN RAILROAD JOURNAL.

Saturday, June 23, 1849.

American Railroad Journal
AND
MINING JOURNAL
UNITED.

An arrangement has been completed by which the American Railroad Journal and the Mining Journal and American Railroad Gazette have been united, and the subscription and advertising list of the Mining Journal has been transferred to the Railroad Journal. The Railroad Journal will be forwarded to all the subscribers to the Mining Journal, unless they signify their desire to have the paper discontinued, in which case they are requested to return to us the numbers forwarded. Those gentlemen who have paid in advance to the Mining Journal, will be entitled to receive the Railroad Journal up to the time of such payment. Advertisements in the Mining Journal that have been paid for in advance will be inserted in the Railroad Journal until the account is balanced. All persons in arrears to the Mining Journal will please at once forward the amount due to this office.

TO THE FORMER PATRONS OF THE
MINING JOURNAL
AND
AMERICAN RAILROAD GAZETTE.

The proprietors of the Mining Journal, in announcing the foregoing transfer, are happy to be able to congratulate its subscribers on the change. Both Journals were devoted to the promotion of the same object, and their union, by giving greater strength, cannot fail to make one Journal more valuable to the public than either could have been without such union. The Railroad Journal is an old and well established paper, and enjoys an extensive circulation. In the hands of its present proprietors, ample arrangements have been made for the discussion and promotion of every interest to which the Mining Journal was devoted. It is the only organ of the railway interests in this country, and is conducted with a spirit and ability that the magnitude of these interests demand; and we need only to refer the attention of our readers to its pages for confirmation of what we have said, and we earnestly recommend them to transfer their support to this Journal in which ours is now merged.

In taking leave of those who have favored us with their patronage in the conduct of the "Mining Journal," we cannot omit the opportunity to thank them for the good will they have thus manifested, and the encouragement they have extended.

Those in arrears to us, either in account of subscription or advertising we would urge to make an immediate settlement with the proprietors of this paper, who alone are authorised to receipt for any dues.

PROPRIETORS OF THE
"MINING JOURNAL AND RAILROAD GAZETTE."

With this number we increase the size of the Journal from 16 to 24 pages. This enables us for a time to dispense with the cover, which was resorted to principally to make room for our advertisements.—A large portion of this increase we devote to reading matter, and we hope to make our Journal more useful to its readers by the wider range and greater fullness allowed in the discussion of the various matters to which our Journal is devoted. The rapid expansion of the railway and mining interests of this country requires much more room than we have hitherto been able to devote to them.

Important Invention.

A few days since we had the pleasure of visiting the Iron Foundry of Mr. Thomas J. Lovegrove, of Baltimore, and there witnessed the operation of a mould, embracing the application of a well known principle in nature, to the casting of iron pipe. The invention is one of those which originate in the simplest and most familiar principles, and is well calculated to excite universal surprise that it has not been resorted to before. The pipes we saw cast were of the kind used by the gas or water company and were turned out with a degree of celerity and excellence that afforded the most convincing assurance of the entire success of the invention. By the ordinary mode of casting pipe, it is necessary to make a sand mould for every separate piece of pipe and a "core," which is formed by wrapping hay around a rod, this again being coated carefully with clay to preserve the tubular or hollow form of the pipe. The time thus occupied may be easily imagined, and the consequent gain that must necessarily attend any plan by which all this is dispensed with.

The invention of Mr. Lovegrove consists of an iron mould, suspended horizontally, and arranged for the introduction of the melted metal by means of a trough at one end. As the metal is introduced a slight depression at one end is effected by means of suitable tackle, and the revolution of the mould immediately commences; by the time all the metal is introduced the mould is elevated to its true position, the gravitation having carried the fused metal to the end of the mould, and it suddenly revolves for about half a minute with considerable velocity, distributing the metal equally to the surface throughout the entire length of the mould from the centrifugal force of the revolution. The vacancy in the centre is of course regulated by the amount of metal—the pipe being made of any degree of thickness required.

The effect within the mould is quite singular, and very distinctly perceived during the operation. As the revolution commences, nothing is to be seen within but a confused mass of molten metal, apparently occupying the whole of the interior; suddenly, but noiselessly, with a discharge of flame, the metal has taken its place at the surface of the mould, is revolving truly with it, and in the twinkling of an eye, the perfect tube is seen within.

In a few seconds the revolution ceases, the mould is separated, the upper half being hoisted off, and the pipe removed. There is no adhesion, the pipe in the instant of cooling undergoing contraction sufficient to obviate this, were there no artificial protection against it. The time occupied from the tapping of the furnace to the lifting the perfect pipe from the mould, was precisely two minutes. And it is obvious that with a range of two or three moulds in operation pipe could be turned out as rapidly as the metal could be drawn from the furnace. That this is a beautiful and very valuable application of centrifugal power, must be manifest, even from this first and yet imperfect series of experiments. The full success of it is beyond dispute, and as Mr Lovegrove has secured a patent for the mould, it is to be hoped, that unlike too many of those whose genius has contributed to the arts and sciences, he may obtain a commensurate reward.

But the invention will not be confined to the mere casting of iron pipe. It is evidently applicable in various departments throughout the whole range of the mechanic arts. It is not limited in its effect either, as we understand it, to a mere smooth surface, but while retaining its circular form it will adapt itself to every variety of external shape and ornament. It is impossible to foresee the wide range of service to which the principle may be adapted; for susceptible as it is of application to the casting of iron pipe thin as sheet iron, and adapted for stove pipe; on the other hand it may be applied to the most colossal cylindrical work that art and science may require, multiplying it to any extent and immensely reducing the cost. Of the general pecuniary effect upon hollow cast iron, there is ground to anticipate from the use of this principle, an ultimate great depreciation of cost.

The mould and machinery we have seen in operation, are those of the original experiment, and of course are susceptible of great improvement. The invention is yet indeed in its first stage of development; but it requires only a familiarity of the principle, and a glance at the result of the operation, to convince the observer that success is already achieved.

Working of Railways by Contract.

The present depressed state of railway property in England is turning the attention of their companies to devising the most economical mode by which their lines can now be managed and sustained. The railway system of this country, from the small cost of our roads, and their better management, have not suffered the reverses that have overwhelmned this kind of property in England; but it is at the same time undeniable that the great and increasing expense of running our roads is creating a general distrust of this species of property which, only a year or two since was considered as offering the very best inducements for investment.

The plan that several leading lines of English railways are adopting to economise in this great item of expenditure, is to work them by contract.—In this way they confidently count upon making a saving of from 25 to 50 per cent. upon the present mode of working them by companies. We can see no reason why they are not correct in their conclusions—and we think that the objections to this plan which suggest themselves in the outset, arise rather from its novelty and from the predjudice we always feel for what we have been long accustomed to, than from any difficulty in the plan proposed.

The arguments in favor of this plan are so obvious and well understood, that we can add no force to them by any thing we can say. In almost every department of industry the great object is to make each laborer or producer directly interested in the result of the united labor of all. This secures a hearty co-operation of all employed, and ensures a degree of fidelity reaching to the most minute ramifications. This principle, so important and so universally acted upon the construction of a road, is abandoned the moment a road is completed, and the work then is intrusted to agents whose great object is their pay, and not the manner in which their services are rendered.

In this number we merely call the attention of companies to this subject. As we said in the commencement, several leading lines of English railway are adopting this mode of working their roads, with full confidence of its success. In another number we shall discuss this matter more at length.

Cotton Manufacture at Reading.

The citizens of Reading are now actively engaged in getting up a cotton factory in that city, which is to have a capital stock of $200,000. A meeting was held in this place on the 14th instant to take measures to secure this object, at which Dr. D. Luther, President, and H. H. Mulenburgh acted as

Secretary. The meeting was addressed by Gen C. T. James, who is attached to the editorial department of this paper, and who superintended the erection of the cotton factories recently put up in Lancaster, who is engaged in putting into operation works of a similar kind in various parts of the country. Committees were appointed to procure subscriptions to the stock, and the spirit manifested at the meeting is a sure pledge of the success of the undertaking. The value of a few such establishments to towns of the size of Lancaster and Reading can scarcely be over estimated, as they give employment to a great amount of labor which otherwise would have been unoccupied, and open an additional market to the agricultural products of the section in which they are situated; while the condition of the operatives in the factories situated in towns where they compose but a fraction of the population, is superior in every point of view to that of towns composed entirely of this class.

☞ We desire to call the attention of our readers to the article in our Journal on the "Floods of the Mississippi," prepared by M. Butt Hewson, Esq., an English Engineer of high character and standing both in his profession and as a gentleman. To us they seem to point out the only mode by which a recurrence of the terrible disasters we are now witnessing can be prevented, as the remedy proposed is but seconding the efforts that rivers always make to throw off the surplus of water, when swollen to a high pitch. Mr. Hewson, we are happy to say, comes to this country with the highest testimonials as a skilful and practical Engineer, and we can cheerfully recommend his services to such companies as may be in want of such a gentleman.

Pennsylvania.

Erie and North-East Railroad Company.

We have just received from the Secretary of this company, G. Sandford, Esq., the report of Mr. Courtwright, the Engineer, of a survey of this road, from Erie, Penn., to the New York state line. Three lines were surveyed having the same general direction, all of which are remarkably favorable for a railroad:

The total distance by the first line is eighteen miles and 1,548 feet, of which will be straight seventeen miles and 4,878 feet, and 1,950 feet of curvature of twelve thousand feet radius, with no grades in passing either way, exceeding fifteen feet to the mile, and no undulating grade at all. The summit is about fifteen and three fourth mile from, and 144 feet above the starting point, and 36 feet above the termination at the New York State Line, making the aggregate grade one hundred and eighty feet.

The total distance by the second line surveyed is eighteen miles and 1,543 feet. Seventeen miles and 4,793 feet of which is straight, and the balance, 1,580 feet, is a curve of twelve thousand feet radius. The difference in distance between these two lines, it will be observed, is but five feet, and the grade and radii of curvature the same in each. A straight line from their starting point at Erie to their termination at the State Line, would be but forty-three feet shorter than the longest of these lines.

The third line is but a continuation of the second line from its point of intersection with the first, (sixteen miles and 1,520 feet from Erie.) straight through to the State Line, making an *entire straight line from Erie to the New York State Line.* This line crosses the Twenty Mile Creek about 600 feet south of the other lines, and at an elevation of about 100 feet above the surface of the water by 700 feet across the Gulf, and intersects the State Line 840 feet south of the other lines. It is eighteen miles and 1,120 feet long, being 426 feet shorter than the first or longest line; 48 feet of which is gained by its being straight, and the balance 383 feet, from the difference of its bearing with the State Line, which it approaches less diagonall than the other lines.

The grades and radii of curvature of the first two lines are the same, with but one hundred feet in *length* of curvature in favor of the second line—The expense of construction will also be much the same for each; so that any preference which should be given one line over the other, would probably be governed by the difference in damage which would be done to private property in the construction of the two lines.

The damage which would be done to private property by the third or straight line would be much the same as that done by the second as it follows that line for more than sixteen miles of the distance from Erie. The expense of grading this straight line will probably exceed either of the other lines about fifteen thousand dollars, owing principally to the difference in expense in crossing the Twenty Mile Creek. As an offset to this additional expense, however, this line possesses the important advantage of having but nine feet of elevation to overcome in coming west, which can be distributed over a distance of two miles, whilst the other two lines have to overcome an elevation in that direction of thirty-six feet, a portion of which is at the rate of fifteen feet to the mile. This is an important consideration, particularly should it be found upon examination, which will probably soon be made, from this place to the Ohio State Line, that that the maximum grade there will be less than fifteen feet to the mile, and from an examination east of our State Line, that the upper crosssing of the Twenty Mile Creek will suit equally well a connection with the Buffalo road.

The grading for either of the lines mentioned, will be very light, and will not for a single track, with the necessary turnouts, exclusive of preparing the foundations and bridging the crossings of Millcreek, Four Mile Creek, Six Mile Creek, Twelve Miles Creek, Sixteen Mile Creek and Twenty Mile Creek, exceed in items the following amounts, viz:

Clearing	18 Acres.
Grubbing,	6 Acres.
Excavation,	220,000 Yards.
Embankment,	250,000 Yards.

Much of the material over which the road passes is loose ground gravel and sand, very easily excavated and forming when finished a dry and most capital road bed. There will probably be no rock excavation on the line except in preparing foundations in the creek bottoms. There are many single sections on the New York and Erie railroad between Port Jervis and Lanesboro' which cost more to grade than the whole grading of this road will cost, exclusive of bridging the streams mentioned.

This road is to form one of the links in the great line of railway from Buffalo west, and its route being identical with the great line of travel between those sections of our country, and from the conformation of the country over which it is to pass, being a road of remarkably easy construction, we cannot for a moment doubt that when constructed it will be one of the best paying roads we shall have. The line of roads on the south shore of Lake Erie will exert a very important influence over the New York and Erie road, which will be brought into connection by railway with the far west as soon as it strikes Lake Erie.

Philadelphia Car Manufactory.

The attention of our readers is invited to this establishment, situated at the corner of Schuylkill Second and Hamilton streets, Spring Garden, Philadelphia, where all the various kinds of railroad furniture are manufactured at the shortest notice.—Its central position gives it great facilities in supplying the wants of roads in this particular, at the most favorable rates; and the attention of purchasers is invited to the various articles offered for sale.

Gen. S. F. Belknap, the great railroad contractor, died on the 19th inst. at his residence, Windsor, Vt.

Georgia Railroad and Banking Company.

We are in receipt of the report of the doings of his company for the year ending March 1, 1849.—The following is the exhibit of the income, expenses, and net profits of the road for that period:

	Year end'g March 31, 1848.	Year end'g March 31, 1849.	Increase.
RECEIPTS.			
Passengers...	$157,694 67	$166,484 04	$8,789 37
Freight.....	280,486 27	376,957 07	96,470 80
U.S.M. & rents	38,871 74	38,573 48	*298 26
Totals.....	$477052 68	$582,014 59	104,961 91
EXPENSES.			
Conduc. transp.	$44,318 25	$49,895 90	$5,577 65
M. Power.....	50,538 72	65,531 14	14,992 42
Maint. of way..	67,256 55	66,054 99	*1,201 56
" cars..	13,439 32	14,300 85	861 53
Total	$175,552 84	$195,782 88	$20,230 04
Net profits....	$301,499 84	$386,231 71	$84,731 87

This statement exhibits a gratifying increase in the income of the road for the last year, of $104,961 91, (22 per cent.) and in the net profits, of $84,631 87, (28 per cent.) with an increase in the expenses of working the road, of only $20,230 04, (11¼ per cent.) The increased income has been, from passengers $8,789 37, and from freight $96,470 80. Thirty-eight thousand six hundred and twenty-eight passengers have been carried in the cars, making an average of 106 per day, both ways, the same as during the previous year. The average number of "through passengers" per day, between Montgomery and Charleston, has been 18, against 16 for the preceding year.

The expense account has been charged with the cost of 25 new freight cars, and one new engine, built in the shops of the company.

The motive power, notwithstanding the unusual requisitions which have been made upon it, is in good condition, The trains have run during the year with regularity, and entire freedom from serious accident.

To accommodate the increasing business of the road, orders have been given for four new freight engines, to be delivered during the ensuing summer, and for the building of 75 new freight cars.—Arrangements have also been made for erecting a car factory machine shop at Augusta, which will greatly increase the facility and economy of manufacturing cars, and a new engine machine shop at Atlanta. The estimated expenses of these are as follows, viz:

Four new freight engines.....	$30,100
Fifty new rail cars.....	30,000
Twenty two new platform cars...	12,500
Car factory, machine shops, &c...	6,000
Engine house and machine shop..	9,000
	$87,500

The expenditures in the engineering department during the past year have been as follows:

Iron, spikes and clamps to relay the road between Augusta & Union Point.	$93,290 77	
Less by flat bar iron sold to Memphis branch railroad company	34,078 80	$59,211 97
Right of way balances.....		552 93
Total		$59.764 90

The estimated expenditures for the ensuing current year are as follows:

1000 tons of ∩ rail, (now arriving).....	$50,000 00
2300 " ⊥ " ordered from Davis Brooks & Co.....	124,200 00
272 " ∩ " " " Cooper & Wiley.....	19.040 00
Spikes, chairs, &c.....	20,200 00
Filling truss and trestle bridges.....	8 000 00
Total.....	$221,440 00

The relaying of the flat bar road with a heavy rail, has been continued during the past year, and at this date, extends 34 miles from Augusta. The same form of rail (except 3 miles of ⊥ rail, purcha-

* Decrease.

sed in Philadelphia,) and plan of superstructure has been continued, as described in the report of 1848.

The iron now on hand, arriving, and ordered, will relay the remaining 41 miles of flat bar road between Augusta and Union Point, except that portion contained between the switches and stations.—The ∩ pattern now on hand, and arriving, will extend the present plan of track, to a point about 2 miles west of Camak. Thence to Union Point, the plan will be a rail of the ⊥ form, weighing 58 lbs per lineal yard, laid on cross-ties, placed an average distance of 2 feet 3 inches apart, from centre to centre.

The cost of repairs is a trifle over 310 dollars per mile of track; and 21 5-10 cents per mile of trains run, The same for a series of years have been as follows:

Repairs per mile of track.						Of trains run.					
1844.	1845.	1846.	1847.	1848.	1849.	1844.	1845.	1846.	1847.	1848.	1849.
$260	$291	$275	$270	$315	$310	25cts.	23cts.	237-10	22 2-10	24 1-10	21 5-110

The road-bed throughout is represented to be in an excellent and improving condition.

Only three accidents to trains of any description, have occurred from defective track during the current year. This is good evidence that the superiors and their subordinates have been dilligent and watchful in the discharge of their duties.

The cost of "maintenance of way" for the year ending April 1st, 1850, it is expected will exceed the same for the past year about 15 per cent., owing to the large force engaged in the renewal of iron and extensive repairs needed on the Extension track.

The following is the

STATEMENT

Of the condition of the

Georgia Railroad and Banking Company, on Monday morning, April 2, 1849.

ASSETS.

The road and its outfit	$3,356,796 81	
Iron and spikes for relaying road below U.P	118,452 68	
F. C Arms, General Superintendent	8,189 63	
Materials for road on hand	30,754 40	
		$3,514,193 52
Salaries, incidentals, premiums and protests	13,234 47	
Interest paid	73,273 20	
Road expenses	188,399 89	
		274,907 56
Banking house and lot.	32,555 26	
Real estate for road and Bank	46,025 92	
Negroes	30,700 00	
		109,281 18
		3,898,382 26
Bal'ce due by agents	22,389 52	
Stocks in other corporations	89,354 31	
Advances on cotton	18,777 91	
Bonds of the city of Augusta	6,500 00	
Bonds of the State of Georgia	17,000 00	
		144,021 74
Bills receivable	1,247 69	
Discounted notes	174,024 65	
Discounted bills	105,820 33	
		281,092 67
Notes of banks in other States		4,140 00
Specie and Specie Funds.		
Due by banks in New York, Charleston, Savannah & Athens	51,234 52	
Notes o. specie-paying banks in Georgia	25,659 06	
Gold and silver coin in the vaults of bank	92 602 36	
		169,495 94
		598,750 35
Total assets		$4,497,132 61

LIABILITIES

Capital stock		$2,262,497 16
Collections on personal account	$618 19	
Collections on ac'nt of Newton co. stockholders	542 48	
		$1,160 67
Income from railroad and mail transportation	543,029 64	
Interest, discount and rent received	26,115 89	
Profit and loss	481,530 36	
		1,050,675 89
Deposits on interest	1,124 68	
Company's bonds	720,900 00	
Dividends unpaid	9,038 56	
		731,063 24
Due to corporations	623 31	
Due to depositors	62,762 78	
Due an agent	19 11	
		63,405 20
Bank notes issued	1,170,120 00	
		1,846,305 00
Railroad receipts issued	11,755 50	
		1,181,875 50
Bank notes on hand	793,210 00	
Railroad receipts on hand	335 05	
		793,545 05
Bank notes and R. R. receipts in circulation	388,330 45	388,330 45
Total liabilities		$1,497,132 61

The total income of the company from all sources, appears from the statement above referred to, to be as follows:

Gross income from road as above		$582,014 59
" " from bank		26,115 89
		608,130 48
Charged with road expenses	195,782 88	
Expenses of bank, taxes &c	13,234 47	
Interest paid	73,273 20	—282,290 55
Leaving net balance of income		$325,839 93

After payment of interest on funded debt and all expenses of the road and bank.

These results show a net profit on the entire cost of the road and outfit, now charged to that account, of about 10 per cent., and over 14 per cent upon the present reduced capital stock on which dividends are paid. This report would have shown a more favorable result but for the large increase in the interest account, arising from the fact, that a large amount of certificates held back for several years with accumulated interest, were paid during the past year.

A change of policy by the board, on the subject of relaying the road with heavy iron to Union Point, has prevented as large a reduction of the funded debt as heretofore contemplated. The low price of iron, and the great importance to the company of a heavy rail upon the entire line, to accommodate the increasing business of the road, induced the board to authorise an expenditure at once, which it had previously intended to extend over several years. This, together with the outfit necessary to meet the expected increase of business from the approaching completion of the State Road, may render necessary a small increase of the present debt, to raise the sums needed, unless some other mode of providing for these wants shall be recommended by the stockholders. In no event, however, do the Directors apprehend any difficulty in providing the small amount that will be needed, without any interruption of semi-annual dividends from the net profits of the company.

Though the speedy payment of the funded debt by the surplus profits, be very desirable, the Directors considered the completion of the road with heavy iron still more so. The flat bar, though a good one of the kind, is unsuited to our heavy business, and the small portion of it now remaining, lessens very much the advantages of the heavy bar on the greater part of it. The improved character of the road, and its increased capacity for business outweigh any objection to an immediate appropriation for the object in question.

Since the last meeting of the stockholders, the Memphis branch railroad, leading from Kingston to Rome, has been completed, and is now in full operation. Though a short road, it will be a very important feeder to the improvements east of it.—The boating on the Coosa is now upon an excellent footing, and well conducted by the enterprising proprietors. The State Road and the Nashville and Chattanoga road are both making satisfactory progress, and strong assurances are given, that the latter will be completed before the close of the present year. The Montgomery and West Point road is also under contract to West Point, and it is believed will be finished with all convenient dispatch.

In addition to the above connections, which will be important feeders to this road, the contemplated road from Atlanta to Lagrange, fills up the last link unprovided for of the great line of internal steam communication from Maine to Mobile. Means have been provided, however, for the completion of the part of this road, extending from Atlanta to Newran, and we cannot doubt that when the importance of this road to those already constructed in that state, and as well as to the commercial interests of the whole country is properly appreciated, it will lead to its speedy construction.

The Georgia Railroad, without the aid of those important feeders, which are now in rapid progress of construction, from which may be expected a vast increase of business, is one of the best paying roads in the country, and is almost the only road running through a section entirely agricultural, whose stock is at a premium in the market; and those gentlemen intrusted with its construction and management have the double satisfaction of giving to their fellow citizens the advantage of railway communication and making the stock of the road a safe and profitable investment of their money.

Railway Progress at the South.

The following letter, written by one of the leading minds of Virginia, now devoted to railway improvement, must attract the attention of the people of that state, and stimulate to action the citizens of Norfolk, who are just opening their eyes to the innobled advantages of her position, to secure the trade of the west. We find this letter in the *Norfolk Beacon*, the Editor of which commends it strongly to the consideration of the people of that ancient city.

LYNCHBURG, 7th May, 1849.

Dear Sir,—I have great pleasure in announcing to you the fact, that the citizens of my town have subscribed *five hundred thousand dollars to the stock of the Virginia and Tennessee Railroad Company.*—Besides this, considerable sums have been subscribed in the counties of Pulaski, Montgomery, Wythe, Smyth, and Washington, and the amount daily increasing. All doubt is now at an end, as to the willingness and ability of our people to subscribe the seven hundred and fifty thousand dollars, required by law to be taken by individuals "solvent and able to pay," before the Board of Public Works are authorised to subscribe on the part of the state, for three-fifths, or $50,000, of the capital stock of our company.

This state of things renders it certain that to the citizens of Lynchburg belongs the credit of being the first to commence the construction of a great line of railway, which will connect, by the shortest and best route, the valley of the Mississippi with the Chesapeake Bay. I now feel more solicitude than ever for the success of the efforts making to reconstruct the Portsmouth and Roanoke railroad. If that road was once rebuilt, even to the point where the line crosses Nottoway river, you would find no difficulty in showing to capitalists, that a line, diverging from the Portsmouth road, at a point about midway between the Nottoway and Meherrin riv-

ers, to pass through Southampton into Greensville county, north of the Meherrin; thence along the highland dividing the waters of that river from those of the Nottoway, through Brunswick, Lunenburg, and along the northern part of Charlotte, near the head of Little Roanoke into the valley of James river at Lynchburg, would present a route so superior—considered either with reference to distance, or the physical features of the country—so as to defy all competition for the vast amount of tonnage, which the Virginia and Tennessee road will conduct across the Blue ridge and Alleghany Mountains into the Atlantic slope of our state. If this connection were formed with Lynchburg, Norfolk would have, within the limits of Virginia, a back country, larger, and having more fertile lands than any three of the United States. I refer not only to that portion of Virginia through which our railroad will pass, but also to the counties west of Lynchburg, from which the tonnage is now drawn by the James River Canal, a work now in progress of construction to Buchanan, (a point 50 miles above us,) and which, doubtless, will be ultimately extended to the eastern base of the Alleghany Mountains, in Alleghany county, if not to the valley of the Kanawha itself.

But this is not the whole extent of back country which, in a few years, will seek an outlet for its products through Norfolk. Tennessee will soon extend the railway which Virginia is conducting to her borders, through her entire length to the Mississippi at Memphis. When these things shall have been done, who can compute the benefits which will result to the whole Union from such a line of intercommunication? For proof that Tennessee rightly understands her true interests, and that she fully appreciates the advantages of her true position I give you the following extract from a letter received by me a few days since from Charles Irving, Esq., of Memphis.

"Knowing the interest taken by you in every thing connected with Internal Improvements, it has suggested itself to me, that an account of the action of our people out here on a similar subject, would be acceptable. In my las. letter—or the one before last—I mentioned a rumor that Governor Jones had turned his attention to the subject of Internal Improvement. Since that time, he has been engaged most zealously in arousing the dormant spirit of our people. He has agreed to make everal sspeeches on this vital subject, and has, to use his own language, "left the heathenism of political worship, for the purer religion of social and physical development, and dedicated the remainder of his days to the subject." He spoke at Germantown to-day, and I think from the indications I observed, he produced considerable impression on the public mind. His speech was of a general character, embodying strong arguments in favor of the absolute necessity of Internal Improvements to the wealth and prosperity of Tennessee, contending that the neglect of this was the cause of southern decline in population and wealth, and that to to the wise internal improvements of the north, was to be traced her political ascendency. He spoke in the happiest manner, and with much more zeal and earnestness than I expected so dry a theme could elicit in one accustomed to the combustible and inflamatory topics of political contention. He is evi ently deeply interested in the subject, and infuses into it a life and attractiveness not generally imparted to its discussion.

"Mr. Stanton, our representative in Congress, also spoke. He is an excellent speaker, though of a different order from Jones. He made an elegant and appropriate speech, and is strongly in favor of Internal improvements. The effect of the proceedings and the continued advocacy of Gov. Jones, who carries enthusiasm into every thing, will soon produce a feeling, which would fully respond to your own views of this matter, I should not omit to state, that both Gov. Jones and Mr. Stanton alluded to the Virginia and Tennessee railroad, and urged upon the people its continuation to Memphis.'

There is no mistaking the "signs of the times." Memphis and Norfolk are s on to be connected by railways, and thus the centre of agricultural production will be brought into close connection with the principal marts of commerce on our Atlantic confines. Once accomplish this great end, and the people, in perfect security, will point with scorn and derision at the fanatical politician, whether he be found north or south of Mason and Dixon's line, who is mad enough to talk of valuing our great confederacy of states.

With high respect,
Your ob't servant, *

Improved Buffers and Breaks.

Mr. John Lane, of Liverpool, has just completed an ingenious arrangement of breaks and buffers for railway carriages, of his invention—some experiments on which have been highly satisfactory. The first operation was to show the powerful and immediate effect of the new breaks, or stoppers, which by a mere pull at a lever handle, so effectually locked a pair of wheels in each carriage, that from a high speed they came to an almost instantaneous pause. In the absence of diagrams, we can but state that this break locks simultaneously the wheels of all the carriages that may follow the first, by means of an ingenious continuation of arrangement of piston rods, springs, and other machinery—all simple in construction, and, consequently, not liable to be thrown out of order. The break itself, when in operation, clips round a drum in the middle of the axletree of the two wheels of each carriage to be stopped. All is placed under the carriage bodies, and the single operation of pulling the break handle in front effects the individual stoppage, in like manner, of every carriage in the train, so that there is no over-straining of any one pair of the wheels. The buffer consists of a cylinder and piston working through a stuffing-box, the piston-rod carrying at its terminus the buffer-head. The cylinder is filled with water, and is connected by a small tube with another cylinder containing air, and above it; on the buffer striking any object, the water is forced up into the cylinder, and, by the elasticity of the air acted on by the water, the engine and train are arrested without injury, and the ease and absence of the shock on the rebound was truly surprising. A strong balk of timber was fixed in the angle of the wall which formed the terminus of the temporary railway, and the mounted passengers, after being whirled along as if to be dashed against the wall, received only a gentle shake, without being unseated, and receded gently backwards with the machines. Both inventions appear of considerable utility.—*London Mining Jour.*

New Coupling Clamps---Important to Railway Companies.

An invention of considerable importance has been brought out by Messrs. Crawford & Grew, the former gentleman being the superintendent of the locomotive department, and the latter the station master at Rugby. The object of the invention is to supersede the present system of attaching and detaching railway carriages, and is called the "double ratchet clamp." The utility of such an invention will be obvious to every one in the habit of travelling by railway, when they contrast it with with the present crude mode. The links by which the carriages are fastened together are so constructed as to prevent any play or freedom between them, further than that allowed by the buffer-springs, so that the unpleasant jolting and frequent collision of passengers' heads, upon a sudden check taking place, to which they are at present subjected, is completely avoided, whilst the delay caused by uncoupling or coupling carriages at different stations is lessened in a very material degree; besides which the risk of accidents and danger to human life is altogether avoided, the process being carried out without the necessity of going between the carriages—a duty that has frequently led to the loss of a finger, a hand, and sometimes even lose of life, the carriages being forced together before the porter could get from between them, and he has, consequently, been crushed between the buffers. Experiments have been made with the cramp on the London and North-Western line in presence of Mr. M'Connell and several other engineers, when those gentlemen expressed their high approbation of the invention, and their perfect satisfaction at the manner in which it worked, Mr. M'Connell intimating that he should recommend its immediate adoption to the directors of the London and North-Western railway; in addition to which Mr. M'Connell, as well as the other gentlemen, highly complimented Messrs. Crawford and Grew upon the ingenuity they had displayed in carrying out so useful and important an invention. The cramp consists of nothing more than two trucks or hoops, connected by what is termed a right and left-handed screw, the peculiarity of which is, that, by turning it in one direction the links are drawn closer together, and by turning it in the other, they are extended. It is worked by an ingeniously constructed toothed wheel, fixed to the middle of the screw, about which a lever is provided, with a click and spring, for the purpose of taking hold of the wheel, in which it is allowed to traverse. All the room required for the action of the cramp will be about 7 inches for the traversing of the lever. The cramp, when being used, is hooked to the side chains of the carriage, and, by its action, the buffers are compressed, the carriages drawn nearer together, and the connecting link is removed or attached with remarkable ease and considerable saving of time. Messrs. Crawford and Grew have taken out a patent for the invention, and we have no doubt that, from the ease and simplicity with which it may be worked, and the important advantages attending its use, every railway company will avail themselves of it, and apply it to their carriages as quickly as they can get supplied with it; the saving in the wear and tear of carriages, as compared with the present system, being very material.—*Birmingham Journal.*

Depreciation of Railway Property in England.

The English papers received by the last steamer state that the depreciation of railway property in England during the last three months cannot be less than from 50 to $60,000,000.

This is in consequence of the disclosures in relation to the fraudulent conduct of the directors of their roads. All confidence in this kind of property seems utterly lost.

To Railroad & Navigation Cos.

Mr. M. Butt Hewson, *Civil Engineer*, offers his services to Companies about to carry out the surveys on works of a line of Navigation or Railroad. He can give satisfactory references in New York City as to his professional qualifications; and will therefore merely refer here to the fact of his having been engaged for upwards of two years conducting important Public Works for the British Government.

Communications will find Mr. Hewson at the office of the Railroad Journal, 54 Wall Street, New York.

PHILADELPHIA CAR MANUFACTORY,

CORNER SCHUYLKILL 2D AND HAMILTON STS.,
SPRING GARDEN, PHILADELPHIA CO., PA.

Kimball & Gorton,

Having recently constructed the above works, are prepared to construct at short notice all kinds of

RAILROAD CARS, Viz:

Passenger Cars of all classes—Open and Covered Freight and Express Cars—Coal Cars—Hand Cars & Trucks of all descriptions.

They are also prepared to furnish Chilled Wheels of any pattern. Car Wheels & Axles fitted and furnished. Snow Ploughs and Tenders made to order. Steel and other Springs always on hand.

All orders will be filled at short notice, and upon as good terms as at any other establishment in the country.

Omnibuses from the Exchange run within one square of the manufactory every 10 minutes during the day.

Philadelphia, June 16, 1849. 1y25

American Pig, Bloom and Boiler Iron.

HENRY THOMPSON & SON,
No 57 South Gay St., Baltimore, Md.,

Offer for sale, *Hot Blast* Charcoal *Pig Iron* made at the *Catoctin* (Maryland), and *Taylor* (Virginia), *Furnaces; Cold Blast* Charcoal Pig Iron from the *Cloverdale* and *Catawba*, Va., Furnaces, suitable for *Wheels* or *Machinery* requiring *extra* strength; also *Boiler* and *Flue Iron* from the mills of Edge & Hilles in Delaware, and *best quality Boiler Blooms* made from *Cold Blast Pig Iron* at the *Shenandoah Works*, Va. The productions of the above establishments can always be had at the lowest market prices for approved paper.

American Pig Iron of other brands, and *Rolled* and *Hammered Bar Iron* furnished at lowest prices. Agents for *Watson's Perth Amboy Fire Bricks*, and Rich & Cos. New York Salamander Iron Chests.

Baltimore, June 14, 1849. 6 mos

Contract for building an Electric Telegraph from Halifax and onwards, in the Province of Nova Scotia.

Sealed Tenders will be received until the 30th day of June next, for building a Line of Electric Telegraph, starting from the city of Halifax—following the public road on the western side of Bedford Basin, thence from the head of the Basin to the Eastern Post Road from Halifax to Truro, and from Truro to the northwest boundary of Nova Scotia, passing through the village of Amherst—following generally the line of the post road, or such other line near thereto, as may be hereafter directed by the commisioners.

The line will be built forty posts to the mile—said posts to be Hacmatac or Cedar, 25 feet in length, 6 inches in diameter at the top, stripped of bark, as nearly straight as the natural growth will permit, and each post to be set five feet in the ground, either in firm earth of sand or gravel, and strongly embedded. Where rock occurs, they are to be firmly secured by means of foot bands and braces, or by a wall of stone well laid, not less than five feet in height, wedging towards the poles; and where soft, or wet earth or clay is found, the hole shall be enlarged sufficiently, and the earth replaced with stone, so as to prevent equally the poles from being disturbed or driven from the perpendicular by the action of violent winds, or their upheaving in soft and wet soil by the frost.

Where the Line passes through forests, dead trees and all other trees, which, by falling, may touch the wires, to be cut down at the expense of the Contractor—the object being to prevent the working of the line being affected by wind falls.

The line is to be constructed with a single line of wire, of the best quality, number nine, and weighing not less than 330 lbs. to the mile—each wire to be firmly connected with, and yet *insulated* from, the top of the posts, by the Patent Insulator—of which a pattern may be seen by applying at the office of the Provincial Secretary. It consists of a cast iron shaft, with teeth cup and cover, glass ball, with bolt and shoulders, and nuts and screws at each end to secure the wire firmly to the glass ball. The glass ball to be cemented in the cast iron cup, with a non-conducting cement, by a lining of some non-conducting substance between the bolthead and the cover, so as to secure a perfect *insulation*, and to protect the glass from fracture and other damage.

The party contracting will be required to furnish the necessary Registers, Batteries, and magnets, of the latest and best quality, of Morse's Patent, for not less than three stations—their different sites to be hereafter appointed by the commissioners.

The whole line will be required to be completed in good working order, and ready to be delivered to the commissioners or their agents, fit for immediate use, on or before the first day of October next.

The Tenders will not include the cost of the poles—the commissioners having already arranged by contract for a sufficient number of these to build the whole line; and these will be laid down in such quantities and sites as may be required.

Ample and satisfactory security will be required for the due and faithful performance of the work, as above stipulated.

JOSEPH HOWE,
GEORGE R. YOUNG,
W. MURDOCK
A. G. ARCHIBALD,
THOMAS LOGAN,
} Commissioners.

Halifax, May, 1849. 3t25

ENGINEERS.

Arrowsmith, A. T.,
Buckfield Branch Railroad, Buckfield, Me.

Bancks, C. W.,
Engineer's Office, Southern Railroad, Jackson, Miss.

Berrien, John M.,
Michigan Central Railroad, Marshall, Mich.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Fisk, Charles B.,
Cumberland and Ohio Canal, Washington, D. C.

Felton, S. M.,
Fitchburgh Railroad, Boston, Mass.

Floyd-Jones, Charles,
New York and Harlem Railroad Extension, Lithgow, Dutchess Co., N. Y.

Ford, James K.,
New York.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Gilbert, Wm. B.,
Rutland and Burlington Railroad, Rutland, Vt.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

Harry, P.,
Binghamton, New York.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Higgins, B.
Mansfield and Sandusky Railroad, Sandusky City, O.

Johnson, Edwin F.
New York and Boston Railroad, Middletown Ct.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Worcester and Nashua Railroad, Worcester, Mass.

Morton, A. C.,
Atlantic and St. Lawrence Railroad, Portland, Me.

McRae, John,
South Carolina Railroad, Charleston, S. C.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Reynolds, L. O.,
Central Railroad, Savannah, Ga.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Robinson, James P.,
Androscggin & Kennebec Railroad, Waterville, Me.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Stark, George.,
Bost., Con. and Mont. R. R., Meredith Bridge, N. H.

Steele, J. Dutton,
Pottstown, Pa.

Trimble, Isaac R.,
Philad., Wil. & Baltimore Railroad, Wilmington, Del.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Thomson, J. Edgar.,
Pennsylvania (Central) Railroad, Philadelphia.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

Williams, E. P.,
Auburn and Schenectady Railroad, Auburn, N. Y.

Williams, Charles H.,
Milwaukie, Wisconsin.

BUSINESS CARDS.

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

James Laurie, *Civil Engineer,*
No. 23 RAILROAD EXCHANGE, BOSTON, MASS.
Railroad Routes explored and surveyed. Estimates, Plans and Specifications furnished for Dams, Bridges, Wharves, and all Engineering Structures.
October 14, 1848. 6m*

James Herron, *Civil Engineer,*
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

Cruse & Burke,
Civil Engineers, Architects and Surveyors,
Office, New York State Institution of Civil Engineers,
STATE HALL, ALBANY., N. Y.
Drawings, specifications and surveys accurately executed. Pupils instructed theoretically and practically at a moderate premium.
May 26, 1849.

To Railroad Companies.
—WROUGHT IRON WHEELS—
SAFETY AND ECONOMY.
NORRIS' LOCOMOTIVE WORKS,
SCHENECTADY, NEW YORK,
Are Manufacturing Wrought Iron Driving, Truck, Tender, and Car Wheels—made from the best American Iron. Address E. S. NORRIS.
May 16, 1849.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.
Agents for Avalon Railroad Iron and Nail Works. Maryland Mining Company's Cumberland Coal 'CED'—'Potomac' and other good brands of Pig Iron.

J. T. Hodge,
EAGLE RIVER P. O., LAKE SUPERIOR.

IRON.

LAP—WELDED
WROUGHT IRON TUBES
FOR
TUBULAR BOILERS,
FROM 1 1-2 TO 8 INCHES DIAMETER.
These are the ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers
THOMAS PROSSER,
Patentee.
28 Platt street, New York.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.
JOHN F. WINSLOW, *Agent.*
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Bro. Baltimore Md

Monument Foundry.
A. & W. DENMEAD & SON,
Corner of North and Monument Sts.,—Baltimore,
HAVING THEIR
IRON FOUNDRY AND MACHINE SHOP
In complete operation, are prepared to execute faithfully and promptly, orders for
Locomotive or Stationary Steam Engines,
Woolen, Cotton, Flour, Rice, Sugar Grist, or Saw Mills,
Slide, Hand or Chuck Lathes,
Machinery for cutting all kinds of Gearing.
Hydraulic, Tobacco and other Presses,
Car and Locomotive patent Ring Wheels, warranted,
Bridge and Mill Castings of every description,
Gas and Water Pipes of all sizes, warranted,
Railroad Wheels with best faggotted axle, furnished and fitted up for use, complete
☞Being provided with Heavy Lathes for Boring and Turning Screws, Cylinders, etc., we can furnish them of any pitch, length or pattern.
☞ Old Machinery Renewed or Sepaired—and Estimates for Work in any part of the United States furnished at short notice.
June 8, 1849.

Iron Wire.

REFINED IRON WIRE OF ALL KINDS, Card, Reed, Cotton-flyer, Annealed, Broom, Buckle, and Spring Wire. Also all kinds of Round, Flat or Oval Wire, best adapted to various machine purposes, annealed and tempered, straightened and cut any length, manufactured and sold by

ICHABOD WASHBURN.

Worcester, Mass., May 25, 1849.

Iron.

THE Works of the New Jersey Iron Company at Boonton, N. J., having been recently enlarged and put in good repair, the company are prepared to receive orders for Iron, which will be executed with dispatch; and they warrant their iron equal in quality and finish to any in this country.

½ Round and square, to 6 inches.
½ Flat 4 "
Ovals, half-ovals and half-round.
Hoop, band and scroll iron.
Nail plates, superior charcoal Horse shoe,
Iron, sheet and Boiler iron.
Tire iron for locomotives.
Railroad spikes.
Pig iron of superior quality for chilling,
do. for foundry purposes.

For sale by JOHN F. MACKIE,
85 & 87 Broad Street,
Sole agent for the New Jersey Iron Co.

June 9, 1849.

WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.
Best and 2d gy. Sheet Steel—for saws and other purposes.
German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.
Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—
Curtus & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

Railroad Iron.

OF approved T patterns, weighing 56 to 60 lbs. per lineal yard, made by the best English manufacturers, and under our own specification and inspection.

In store and to arrive. For sale by
DAVIS, BROOKS, & CO.,
68 Broad street.

New York, June 1, 1849. tf

☞ The above will favorably compare with any other rails.

Railroad Iron.

100 Tons 2½ x ½, | 30 Tons Railroad.

All fit to re-lay. For sale cheap by
PETTEE & MANN,
228 South St., New York.

May 16, 1849.

MANUFACTURE OF PATENT WIRE ROPE and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers, etc, by

JOHN A. ROEBLING, *Civil Engineer*,
Pittsburgh, Pa.

These *Ropes* are now in successful operation on the planes of the Portage railroad in Pennsylvania, on the Public Slips, on Ferries, and in Mines. The first rope put upon Plane No. 3, Portage railroad, has now run four seasons, and is still in good condition.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 23, 1849.

SPRING STEEL FOR LOCOMOTIVES, TENDERS AND CARS.—The subscriber is engaged in manufacturing spring steel from 1½ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address J. F. WINSLOW, *Agent*,
Albany Iron and Nail Works.

Pig and Bloom Iron.

THE Subscribers are Agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniata Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by

A. WRIGHT & NEPHEW,
Vine Street Wharf, Philadelphia.

Railroad Iron.

RAILROAD IRON & LOCOMOTIVE TIRES imported to order, and constantly on hand, by

A. & G. RALSTON,
4 South Front St., Philadelphia.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron. THOMAS B. SANDS & CO.,
22 South William street,

February 3, 1849. New York.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, *President*
Troy, N.Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N.Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md.

November 6, 1848.

Railroad Iron, Pig Iron, &c.

600 Tons of T Rail 60 lbs. per yard.
25 Tons of 2½ by ½ Flat Bars.
25 Tons of 2½ by 9-16 Flat Bars.
100 Tons No. 1 Gartsherrie.
100 Tons Welsh Forge Pigs.

For Sale by A. & G. RALSTON & CO.
No. 4 So. Front St., *Philadelphia.*

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phœnix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehannah river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.,
45 North Water St., Philadelphia.

March 15, 1849.

Railroad Iron.

THE Undersigned offer for sale 3000 Tons Railroad Iron at a fixed price, to be made of any required ordinary section, and of approved stamp.

They are generally prepared to contract for the delivery of Railroad Iron, Pig, Bar and Sheet Iron—or to take orders for the same—all of favorite brands, and on the usual terms. ILLIUS & MAKIN.
41 Broad street.

March 29, 1849. 3m.13

Railroad Iron.

THE TRENTON IRON COMPANY ARE NOW turning out one thousand tons of rails per month, at their works at Trenton, N. J. They are prepared to enter into contract to furnish rails of any pattern, and of the very best quality, made exclusively from the famous Andover iron. The position of the works on the Delaware river, the Delaware and Raritan canal, and the Camden and Amboy railroad, enables them to ship rails at all seasons of the year. Apply to

COOPER & HEWITT, *Agents.*
17 Burling Slip, New York.

October 30, 1848.

THE NEW JERSEY IRON CO'S WORKS AT Boonton, are now in full operation, and can execute orders for Railroad Bars of any required pattern, equal in quality to any made in this country. Apply to J. F. MACKIE,
Nos. 85 and 87 Broad St.

New York, June 8, 1849.

American and Foreign Iron.

FOR SALE,

300	Tons	A 1,	Iron Dale Foundry Iron.	
100	"	1,	"	"
100	"	2,	"	"
100	"	"	Forge	"
400	"	Wilkesbarre	"	"
100	"	"Roaring Run"	Foundry Iron.	
300	"	Fort	"	"
50	"	Catoctin	"	"
250	"	Chikiswalungo	"	"
50	"	"Columbia" "chilling" iron, a very superior article for car wheels.		
75	"	"Columbia" refined boiler blooms.		
30	"	1 x ¼ Slit iron.		
50	"	Best Penna. boiler iron.		
50	"	"Puddled"	"	
50	"	Bagnall & Sons refined bar iron.		
50	"	Common bar iron.		

Locomotive and other boiler iron furnished to order.

GOODHUE & CO.,
64 South street
New York.

Roman Cement,

OF the best quality, now landing from ship Hendrick Hudson, from London, made by Billingsley, Mial & Co., and superior to anything of the kind manufactured in England. For sale by G. T. SNOW,
109 Water Street, New York.

Text Book of Mechanical Drawing,

FOR the use of SCHOOLS and SELF-INSTRUCTION, containing,

1st. A series of progressive practical problems in Geometry, with full explanations, couched in plain and simple terms; showing also the construction of the *parallel ruler*, *plane scales* and *protractor*.

2d. Examples for drawing *plans*, *sections* and *elevations* of Buildings and Machinery, the mode of drawing elevations from *circular* and *polygonal* plans, and the drawing of Roman and Grecian Mouldings.

3d. An introduction to *Isometrical drawing*, with 4 plates of examples.

4th. A treatise on *Linear Perspective*, with numerous examples and full explanations, rendering the study of the art easy and agreeable.

5th. Examples for the projection of shadows.

The whole illustrated with 50 STEEL PLATES.

Published by WM. MINIFIE & CO.,
114 Baltimore St., Baltimore, Md.

Price $3, to be had of all the principal booksellers.

LAWRENCE'S ROSENDALE HYDRAULIC Cement. This Cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms, and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight papered barrels, by JOHN W. LAWRENCE,
142 Front-street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y.

NICOLL'S PATENT SAFETY SWITCH FOR Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscriber, Inventor and Patentee. G. A. NICOLLS,
Reading, Pa.

Large Wooden Pumps.

SEVERAL Large Wooden Square Pumps, of various sizes from 6 to 24 inches, and lengths from 10 to 25 feet, strongly bolted and strapped together with wrought iron; and used to great advantage on the Boston Water works; also two screw pumps each 25 feet long and 2½ feet in diameter, are now for sale by the Boston Water Commissioners.

For further particulars inquire at No. 119 Washington Street, Boston, or of E. S. CHESBROUGH, West Newton.

June 8, 1849.

P. S. DEVLAN & CO's Patent Lubricating Oil.

THE Subscribers invite the attention of Railroads, Steamboats, Machinists, etc., to the above article of Oil; they are prepared to supply it in any quantity. Certificates of its superiority over all other oils, from several of the largest Works and Railroads, can be seen at our office. KENNEDY & GELSTON,

5½ Pine street, New York,

Sole Agents for the New England States and State of New York. 1y14

TO RAILROAD COMPANIES AND MANUfacturers of Railroad Machinery. The subscribers have for sale American and English Bar Iron, of all sizes; English Blister, Cast, Shear and Spring Steel; Juniata Rods; Car Axles, made of double refined iron; Sheet and Boiler Iron, cut to pattern; Tires for Locomotive Engines, and other railroad carriage wheels, made from common and double refined B. O. Iron; the latter a very superior article. The Tires are made by Messrs. Baldwin and Whitney, Locomotive Engine Manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside.

THOMAS & EDMUND GEORGE,
a45 N. E. cor. 12th and Market sts., Philad., Pa.

MACHINE WORKS OF ROGERS KETCHUM & GROSVENOR, *Patterson, N. J.* The undersigned receive orders for the following articles manufactured by them of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

Railroad Work.—Locomotive Steam Engines and Tenders; Driving and other Locomotive Wheels, Axles Springs and Flange Tires; Car Wheels of Cast Iron a variety of patterns and chills; Car Wheels of Cast Iron with wrought tires; Axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and millwright work generally, hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
Patterson, N. J., or 60 Wall St., New York.

To Railroad Companies and Contractors.

FOR SALE.—Two Locomotive Engines and Tenders, at present in use on the Beaver Meadow Railroad, being too light for their coal trains, but well calculated for either gravel or light passenger trains.

They weigh, in running order, about 8 tons each—having one pair of driving wheels 4 feet diameter, 4 truck wheels 30 inches diameter, with cylinders 10 in. diameter, and 18 inches stroke of piston. Tenders on 4 wheels. Address JAMES ROWLAND,

Prest. Beaver Meadow Railroad & Coal Co., Philadelphia.

or, L. CHAMBERLAIN, Sec'y, at Beaver Meadow, Pa.

May 19, 1849. 20tf

India-rubber for Railroad Cos.

RUBBER SPRINGS—*Bearing and Buffer—Fuller's Patent—Hose* from 1 to 12 inches diameter. Suction Hose. *Steam Packing*—from 1-16 to 2 in. thick. *Rubber and Gutta Percha Bands.* These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849.—No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street.
New York, May 21, 1849.

Large Pumps.

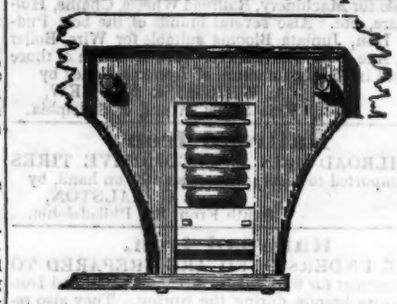
THE Boston Water Commissioners offer for sale a large number and variety of Wooden Square Pumps, used in clearing excavations from water during the construction of the Aqueducts.

Also Two Large Screw Pumps, each 25 feet long and 2½ feet in diameter.

For further particulars, enquire at the office of the Water Commissioners, 119 Washington St., Boston, or of E. S. Chesbrough, West Newton.

May 19, 1849. 6w20

Patent India-rubber Springs.



FULLER & CO. beg that parties interested in the use of these Springs will not be misled by ex parte statements, but will examine the actual Patents and judge for themselves.

The statements made by Messrs. Crane & Ray shall be treated seriatim.

They claim to have first introduced India-rubber Springs about two years since, whereas they were used by Fuller & Co. nearly four yeas ago.

They claim the exclusive right to use Sprngs. They have no right whatever; every spring they make is an infringement upon Fuller's patent, dated 1845. They claim the sole right to make India rubber, and apparently think because a species of India-rubber was patented some years since, that no person can make any other now. A patent was *granted in January last* to Messrs. Tyer & Helm for a new and improved kind of Vulcanized rubber which is used by Fuller & Co.

Fuller's springs it is needless to say are in very general use, although Messrs. Crane & Ray pretend that they know of only one or two instances. Fuller & Co. guarantee all parties who use their springs.

As to the Legal proceedings—an action has been commenced against one company for an alleged infringement of Goodyear's patent, but is being defended with every prospect of success. An action has also been commenced by Fuller & Co., against parties for an infringement of Fuller's patent, and *this will be done in every case of violation.*

In every case in which Fuller's spring has been applied, it has been pronounced superior to that made by Mr. Ray, and this fact induces Messrs. Crane & Ray to claim the right of using it. They attempt to lead the public from the real question at issue, by producing a Deposition as to Mr. Ray having *tried to make* a spring which Mr. Fuller *did make* and patent. If Mr. Ray did invent a spring in 1844, why did he not apply for a patent, and not wait until 1848, when his application was rejected!

Mr. Knevitt has never stated that the springs were put on by him, which are refered to in Mr. Hale's article, but he does state that those springs are made according to Mr. Fuller's specification, and consequently are an infringement upon it. The article of Mr. Hale in the Boston Advertiser, quoted by Messrs Crane & Ray, was followed immediately by a letter in the same paper, from Mr. Knevitt, setting forth the facts of the case.

The springs refered to were put on by Mr. Ray before Mr. Knevitt came to the United States; when he arrived he gave Mr. Ray notice not to proceed further in making or vending such springs; Mr. Ray then said he did not wish to infringe, and would not continue to do so, and he then contrived an India-rubber and Air spring which totally failed.

In the selection of their first agent, Fuller & Co. were particularly unfortunate, and their reason for adverting to it is simply that it may tend to throw light on subsequent transactions, and furnish a reply to the remark, "that this opposition was invited by their own delay in getting the thing to work." The individual refered to undertook the agency for Fuller's springs, and left Liverpool on the 1st January, 1847, furnished with a complete set of drawings, models, etc., and every necessary instruction to make arrangements respecting the supply of material, and to have it at work within the time limited by law; but *from that hour to the present, not a single communication has been received from the said agent.* Some of their models, however, they have traced into the hands of parties now seeking to invade their rights, and by whom they understand they have been exhibited as specimens of their own invention.

The superiority of Fuller's spring is implied in the offer of the New England Car Co. to make springs upon his principle (now that a preference is given to the disc and plate form) and this notwithstanding the fact, that Fuller & Co. have a patent, and that Mr. Ray's application for one was rejected. The public can judge which company's course has been the most honorable, or whose statements are entitled to consideration.

Fuller's springs can be obtained of *Mr. Knevitt* the Agent, at 38 Broadway New York, and of *Messrs. James Lee & Co.*, 18 India Wharf, Boston.

May 26, 1849.

To Contractors.

OHIO AND PENNSYLVANIA RAILROAD.

Proposals will be received at the office of the Ohio and Pennsylvania railroad Co., in the city of Pittsburgh, until SATURDAY, the 30th of JUNE, 1849, for the Grading and Bridging of the Railroad from the mouth of Big Beaver to the State line of Ohio, a distance of about twenty miles. Drawings and specifications of the work to be let may be seen at the office in Pittsburg, during the week before the letting, on application to Solomon W. Roberts, Chief Engineer; and information may be obtained at any time at the office of Edward Warner, Resident Engineer of the Eastern Division, New Brighton, Beaver county, Pa. The work is well worthy of the attention of experienced and energetic contractors, and the line passes through a fertile country, and is easy of access at all points.

By order of the Board of Directors.

WM. ROBINSON, Jr., President.

Pittsburgh, May 21, 1849.

Extension of the Baltimore & Ohio Railroad.

TO CONTRACTORS FOR GRADUATION AND MASONRY.

PROPOSALS are invited for the graduation and masonry of about 25 miles more of this road, beginning at a point some 64 miles west of Cumberland, and ending at a point about 13 miles west of Cheat river, embracing all the sections from No. 64 to No. 88, both inclusive. The graduation on nearly all of these sections will be heavy, and will include one Tunnel of considerable length and three short ones. There will be also two Viaducts of medium size.

Specifications and plans of the work will be ready for distribution to proposers by the 13th of June, prox., at the Company's office in Cumberland. The proposals will be addressed to the undersigned, and will be received up to Saturday, July 7th, inclusive, at the same place. Proposers are earnestly requested to examine the line closely before bidding, and to avail themselves of the ample means of information of the value of the work, which will be furnished them, as contractors from a distance, accustomed to more difficult excavations than those to be met with on this line, will otherwise be likely to make their estimates too high. The best testimonials will be required, and an energetic prosecution of the work will be necessary. The payments will be cash, with the usual reservation of one-fifth till the completion of the contract. By order of the President and Directors. BENJ. H. LATROBE,

Baltimore, May 31, 1849. Chief Engineer.

C. W, Bently & Co.,

PORTABLE Steam Engine and Boiler Manufacturers, East Falls Avenue, near Pratt St. Bridge, BALTIMORE, MARYLAND.

Their Engines are simple in their construction, compact and durable; they require no brick work in setting them, and occupyidg but a small space (a six horse power engine and boiler, standing on a cast iron plate of three by six feet.)

They also manufacture Major W. P. Williamson's new oscillating Engine; a superior article, combining cheapness and simplicity (one of which may be seen in operation at their shop.) Both of these engines are adapted to any purpose where power is required, and may be made of any capacity; and for economy in use of fuel are unsurpassed.

All kinds of machinery made to order. Steam Generators, Force Pumps, Wrought Iron Pipes and Fillings for Steam, Water, Gas, etc., constantly on hand,

Baltimore, June 6, 1849,

BLAKE'S PATENT FIRE & WEATHER-PROOF PAINT, OR ARTIFICIAL SLATE.

This extraordinary substance is found in a stratum of rock in Sharon, near Akron, Ohio; when taken from the mine it has all the appearance of the finest Indigo, and is no harder than cold tallow; but exposure a few days to the atmosphere turns it to hard *slate* or *stone;* it is reduced to a fine powder, mixed with Linseed Oil to the consistency of thick paint, and applied with a brush, and after an exposure a few months to the atmosphere, this coating becomes a perfect *slate*, protecting whatever covered, from the action of the weather and from fire. It has been found upon analization by Dr. CHILTON, of the city of New York, to consist of larger proportions of Silica, Alumina, and Black Oxide of Iron and Magnesia, with lesser of Lime and Carbon; the transition therefore [according to the opinion of Drs. Chilton and Locke] from the liquid *paint* to the hard *slate* is accounted for according to nature's own laws, as the oil absorbs and evaporates by the action of the atmosphere, the powerful adhesive attraction incident to the Black Oxide of Iron, binds and attracts not only the particles together, but too the substance covered, so that the longer on, the more powerful the attraction, consequently the harder the *slate*, and the closer it will adhere to the substance applied; and as it contains a large amount of Alumina and Magnesia, two of the best non-conductors of heat that we have, consequently the coating [after it turns to slate] is indestructable by fire, therefore it protects the wood from the air, and where there is no air there is no blaze or combustion, the wood therefore will *char* before the coating will give way. It is being used extensively for covering roofs of either shingles, matched boards, tin, zinc, sheet iron, or thick paper; if your shingles have been on for years you have only to sweep off the moss and lint with a stiff broom and cover with two or three good coats and in a few months you have a perfect *slate roof* impervious to the action of *weather* and *fire*.—There is nothing equal to it for Steamboat and Car decks, for all kinds of iron, as it forms a coating nearly as hard as the iron itself and never cleaves off.

It is used upon brick walls both as a paint and cement, it forms a perfect *stone* coating, through which not a particle of moisture can pass; in fact, it is used upon anything you wish to protect from *fire* or *weather*.

The Government has granted a patent to me for the discovery of its application as a fire and weather-proof composition, or artificial slate.

The Fair of the American Institute, held last fall awarded me a Medal, and the Fair of the State of New York a Diploma. The examining committee of the American Institute, of whom Dr. J. R. Chilton was chairman, and had some three years previous analysed it, states in the report, that it was an article superior to anything that had been presented as a weather and fire proof covering.

I would call the attention of the public to a discovery I made about three years since of an article similar to my black pigment, but instead of its being colored with the black oxide of iron, it is colored with the *red*, giving to the substance a beautiful Chocolate, the fashionable color of the day, for sides of buildings. It does not become quite as hard as the black, consequently is not quite so good for roofs, but is preferred on account of color for sides. I have a large quantity of this now prepared for market and can supply all demands.

LOOK-OUT FOR FRAUD.

For the last few months there have been scores of individuals engaged in digging, grinding and sending to a distance all kinds of stuff, much of it no better than *dirt* from the street or *clay* from any bank, calling it all good *fire* and *weather* proof *paint*, like mine they say, but of a different color. Now it is impossible for them to know anything of the weather proof qualities of this article, as it has not yet been a year since they first commenced digging it, and according to the opinion of Dr. Chilton, of New York., and Dr. Locke, of Cincinnati, this stuff is entirely worthless, as an outside coating, as it has neither the *red* or the *black* oxide of iron in it, consequently there can be no cohesive attraction; therefore, as the action of the atmosphere destroys the oil with which it is applied, it will wash or rub off like chalk or whiting.

Others are mixing enough of mine to give it the color, and selling it as mine. Others are engaged in digging, grinding and offering for sale precisely the same article I have patented, contending that they have a right to sell it in its powdered state, and that those who buy and mix with the oil to make the compound, must take the responsibility of the infringement of the patent.

I therefore will give *notice* to all, that I have instructed my agents throughout the country, to take the *name* and *residence* of every individual who shall buy and mix with oil and use this compound [except from me or my authorised agents] that I shall hold them to a strict accountability, and shall call upon all such to settle with and pay me for thus infringing upon my patent, and in case they refuse I shall commence suits at law against them.

Some of those engaged in this nefarious traffic in order to push their article into market, contend that my patent will not stand; that the substance was known and used for years previous; and a statement to that effect was got up and published by Thomas Caldwell, and signed by several individuals, every one of whom [so far as I know them] was either in the business or preparing to go into it. Now I will not bandy words with a set of men who have not *moral honesty* sufficient to deter them from *stealing*, and appropriating to their own use the inventions and discoveries of others, but will insert a statement of all the officers of the township of Sharon, who have no interest further than to state the truth; the which statement, coming as it does from such a source, must be sufficient to convince any unprejudiced mind of the falsity of their position.

We, the officers of the township of Shanon, will state that we do not believe there ever was a Patent more *honestly* or *laboriously* earned, or more *deservedly* granted than the one granted to Mr. Blake for a weather and fire-proof composition or artificial slate, as he pursued his experiments with the most indomitable perseverance, under very discouraging circumstances, as the public had not the least confidence that there could be anything valuable made from the substance. He therefore had to encounter, for years, the *jeers* and *scoffs* and ridicule of nearly the whole community; and we do not believe that there is one man in a thousand who would have persevered under all the difficulties. But he has at last triumphed over all obstacles; and we believe there is now but one opinion in awarding to him the merit of this valuable discovery.

GEO. W. CRANE, HORACE GIBBS, JNO. EVERHARD, } Justices of Peace.
LEWIS C. CHATFIELD, R. W. MILLS, BFNJ. JONES, } Trustees of Township.
WM. F. EVERETT, Township Clerk.
ALLEN HOWFS, Treasurer.

How is it possible to know anything of the lasting qualities of this Counterfeit stuff? as it is not a year since the first was tried. The Public therefore to be safe should purchase from my Agents, and see that every Barrel is marked "Blake's Patent Fire-proof Paint."

This may certify that we have been acquainted with Blake's Patent Fire-proof Paint for some years, and are well assured that it is really what its name indicates —*fire-proof*. And we will here state to the public that buildings well covered with this paint will be taken at our several offices at lower rates of insurance than those covered with tin or zinc, as we consider it a better fire proof.

H. K. SMITH, Sec. Summit Mutual Fire Ins. Co.
DAN'L S. LEE, Agt. Medina Co. Mutual Ins. Co.
D. B. HADLEY, Agt. Stark Mutual Insurance Co.
Akron, March 5, 1849.

—

MR. BLAKE—Dear Sir: From the nature of my business, I have had my attention turned for several years to your "*Patent Fire-proof Paint*," and as a protection against fire to those buildings to which it is thoroughly applied I consider it preferable to *tin* or *zinc*.

R. F. CODDING, Agt. Portage & Farmer's Copley, April 12, 1849. Insurance Co.

—

We, the undersigned, in our statement to Caldwell, had reference only the grinding or fineness of the different paints, and we will further state that [aside from BLAKE'S PATENT] we feel it a duty we owe to Mr. Blake to purchase of him, as no others had anything to do with Fire-proof Paint, until after Mr. B. by *years of experiments*, had discovered its value and introduced it to the public.

R. A. STINEHOUR, L. C. NOTT, S. J. MILLER, } Painters.

Akron, April 9, 1849.

—

MR. BLAKE—Dear Sir: I had a building adjoining the wall of my Stone Cotton Factory, the roof of which was covered with your Fre-proof Paint, or Artificial Slate. The factory took fire, and during the progress of its destruction, large numbers of burning shingles and other combustible materials fell upon this roof, so covered, and I expected every moment to see it burst into flames, but after the factory burned down I examined said roof and found it literally covered with coals and cinders, but the fire had not made the least impression upon it. After this test, there certainly can be no doubt as to its fire-proof qualities. SETH C. JONES.

Rochester, N.Y., Sept. 1848.

—

AMERICAN HOTEL, Broadway, New York, Oct. 4, 1848.

MR. BLAKE—Dear Sir: We last Spring covered the roof of the American with your Fire-proof Paint. We now find that it has become as hard as slate, and the almost constant tread of the servants [who use the top of the house for drying clothes] does not affect it in the least, and it proves all that it was recommended.

TABER & BAGLEY.

We, the undersigned, inhabitants of Sharon, have for the last three years watched with much interest the trial of Blake's Metalic Fre-proof Paint found in this town, we have covered our houses with this fire-proof paint, and can now with confidence state to the public that it is an article of great value; that the sun, rain or frost has no other effect than to turn it to stone, so that we now have to all intents a perfect *Slate roof*, and so perfectly does it protect the roof from moisture that frequently several gallons of dew runs from the eaves in the morning; and where there is no moisture there is no decay, and the rain that falls from the roof is as pure and clear as the purest *Spring water*, and from the nature of the article it must be an excellent FIRE PROOF; we therefore can unite in recommending it to the public, and believe that no good building where shingles are used ought to be left *unslated*.

Wm. Chatfield, Joseph W. Crane, Wm. Ingham, Adam Kooder, Thomas Rhodes.

Shanon, June 1, 1847. —

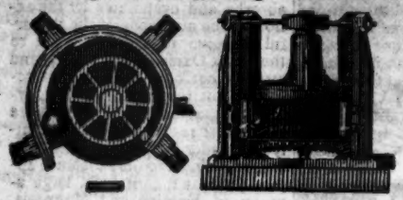
All Letters and Communications addressed to the Patentee, at No. 3 Broad street, near Wall, New York, or at Akron, Ohio, will meet with prompt attention.

WM. BLAKE,
Patentee of Fire-proof Paint.

DIRECTIONS. Mix the Powder with Linseed Oil to the consistency of Thick Pain, and apply two or three good coats with a common paint brush, being careful to keep the paint well stirred in the pot while putting on. 100 lbs. will cover the roof of a building 33 feet square, or 1,000 superficial feet.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phœnixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll rounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery *for making Spikes*, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

RAILROAD WHEELS.

CHILLED RAILROAD WHEELS.—THE UNdersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

CHILLED RAILROAD WHEELS.—THE UNdersigned, the *Original Inventor* of the *Plate Wheel* with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money.

A. TIERS,
Point Pleasant Foundry.

He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country. A. T.

Kensington, Philadelphia Co.,
March 12, 1849.

ENGINE AND CAR WORKS.

DAVENPORT & BRIDGES,

HAVING ASSOCIATED WITH THEM

MR. LEWIS KIRK, OF READING, PA.,

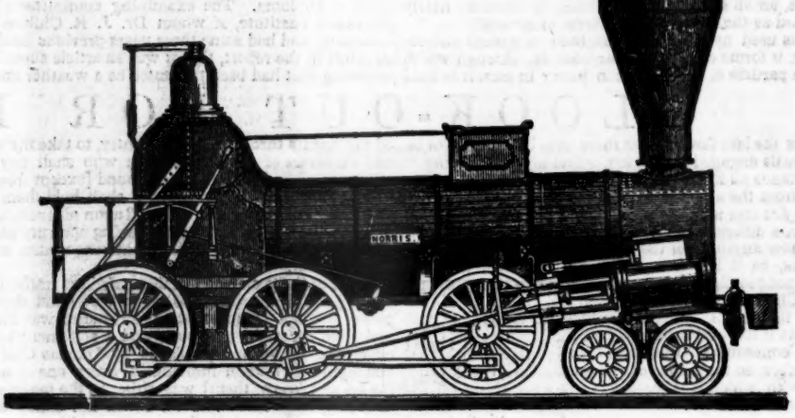
And recently enlarged their Establishment, (making it now the most extensive in the United States,) they are prepared to manufacture to order Locomotive Engines and Cars of every description. Stationary Engines, Steam Hammers, Boilers, and all kinds of Railroad Machinery. Also, Castings and Forge Irons of all kinds—including Chilled Wheels, Frogs, Chairs, Switches, Car Axles, and Locomotive Cranks, Connecting Rods, Steel Springs, Bolts, etc., etc. Orders from all parts of the country solicited for Engines and Cars, or any part or parts of the same. All orders will be furnished at short notice, and on as good terms as any manufactory in the country. Coaches pass our works every fifteen minutes during the day, from Brattle St., Boston.

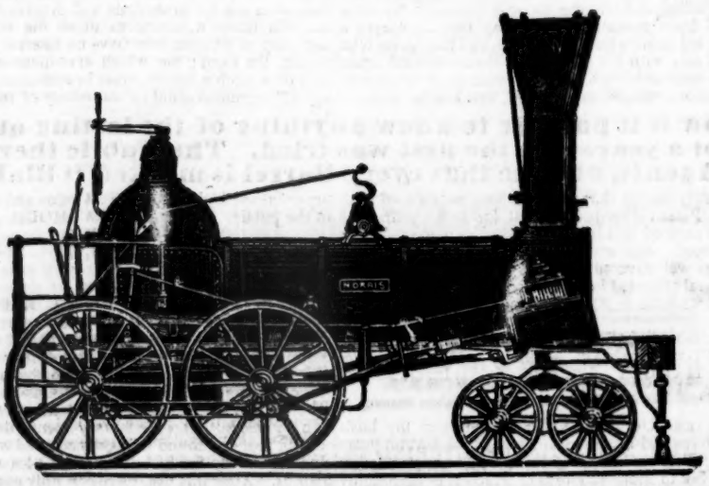
DAVENPORT, BRIDGES & KIRK.

Cambridgeport, Mass, February 16th, 1849.

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,





THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tires are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS.

Mattewan Machine Works.

THE Mattewan Company have added to their Machine Works an extensive LOCOMOTIVE ENGINE department, and are prepared to execute orders for *Locomotive Engines* of every size and pattern—also *Tenders, Wheels, Axles,* and other railroad machinery, to which they ask the attention of those who wish such articles, before they purchase elsewhere.

STATIONARY ENGINES, BOILERS, ETC.,
Of any required size or pattern, arranged for driving *Cotton, Woollen, or other Mills,* can be had on favorable terms, and at short notice.

COTTON AND WOOLLEN MACHINERY,
Of every description, embodying all the modern improvements, second in quality to none in this or any other country, made to order.

MILL GEARING,
Of every description, may be had at short notice, as this company has probably the most extensive assortment of patterns in this line, in any section of the country, and are constantly adding to them.

TOOLS.
Turning Lathes, Slabbing, Plaining, Cutting and *Drilling Machines,* of the most approved patterns, together with all other tools required in machine shops, may be had at the Mattewan Company's Shops, Fishkill Landing, or at 39 Pine street, New York.

WM. B. LEONARD, *Agent.*

IRON BRIDGES, BRIDGE & ROOF BOLTS, etc. STARKS & PRUYN, of Albany, New York, having at great expense establishe. a manufactory with every facility of Machinery for Manufacturing Iron Bridges, Bridge and Roof Bolts, together with all kinds of the larger sizes of Screw Bolts, Iron Railings, Steam Boilers, and every description of Wrought Iron Work, are prepared to furnish to order, on the shortest notice, any of the above branches, of the very best of American Refined Iron, and at the lowest rates.

During the past year, S. & P. have furnished several Iron Bridges for the Erie Canal, Albany Basin, etc. —and a large amount of Railroad Bridge Bolts, all of which have given the most perfect satisfaction.

They are permitted to refer to the following gentlemen:

Charles Cook, Nelson J. Beach, Jacob Hinds,	Canal Commissioners of the State of New York.
Willard Smith, Esq.,	Engineer of the Bridges for the Albany Basin.
Messrs. Stone & Harris, Mr. Wm. Howe,	Railroad Bridge Builders, Springfield, Mass.
Mr. S. Whipple,	Engineer & Bridge Builder, Utica, N. Y.

January 1, 1849.

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to ¼ in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2300 lbs. per square inch, with Stop Cocks, T's, L's, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.

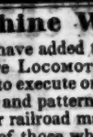
Manufactured and for sale by
MORRIS, TASKER & MORRIS.
Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

THE NEWCASTLE MANUFACTURING Co. continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack Screws, Wrought Iron Work and Brass and Iron Castings, of all kinds connected with Steamboats. Railroads, etc.; Mill Gearing of every description; Cast Wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,
a45 President of the Newcastle Manuf. Co.

PATENT MACHINE MADE HORSE-SHOES.

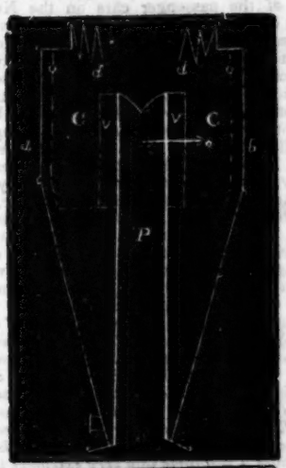


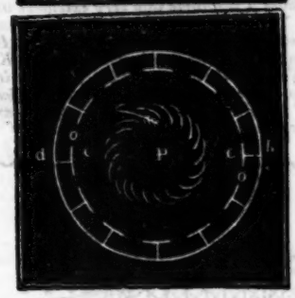
The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, *Agent,*
Troy Iron and Nail Factory, Troy, N. Y.

FRENCH & BAIRD'S Patent Spark Arrester.





TO THOSE INTERESTED IN RAILROADS. Railroad Directors and Managers are respectfully invited to examine an improved Spark Arrester recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both Passenger and Freight Engines, and have been brought to such a state of perfection, that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust, they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase, or obtain further information in regard to their merits.

R. L. Stevens, president Camden and Amboy railroad company; Rich'd Peters, sup't Georgia railroad, Augusta, Ga.; G. A. Nicolls, sup't Reading railroad, Reading, Pa.; W. E. Morris, pres't Philadelphia, Germantown and Norristown railroad company, Philad.; E. B. Dudley, pres't W. and R. railroad co., Wilmington, N. C.; Col. Jas. Gadsden, pres't S. Carolina railroad co., Charleston, S. C.; W. C. Walker, agent V. and J. railroad, Vicksburg, Miss.; R. S. Van Rensselaer, sup't Hart. and N. H. railroad; W. R. McKee, sup't Lexington and Ohio railroad; T. L. Smith, sup't N. Jersey railroad and transp. co; J. Elliott, sup't M. P., Philadel. and Wilm. railroad; J. O. Sterns, sup't Elizabethtown and Somerville railroad; R. R. Cuyler, pres't Central railroad, Savannah, Ga.; J. D. Gray, sup't Macon, (Ga.) railroad; J. H. Cleveland, sup't of Southern railroad, Monroe, Mich.; M. F. Crittenden, sup't mo. power Central railroad, Detroit, Mich.; G. B. Fisk, pres't Long Island railroad, Brooklyn, L. I.

Orders for these chimneys and arresters, addressed to the subscribers, care of Baldwin and Whitney, of Philadelphia, will be promptly executed.

The subscribers will dispose of single rights, or rights for one or more States on reasonable terms.

FRENCH & BAIRD.

Philadelphia, Pa., April 6, 1844.

The letters in the figures refer to the article given in the Journal of June, 1844.

Improvement for Lessening Friction on Railroads.

THE Improvement sometime since perfected for lessening the friction on rails, cars and engines, having been fairly tested, and found to possess all the advantages anticipated, is now presented to the notice of parties connected with railroad companies.

The article used is India-rubber, chemically combined with a metalic substance, in such a manner as to give it a remarkable degree of strength and durability, and the peculiar quality of not being affected by abrasion, or the extremes of either heat or cold.

The advantages derived from its application are briefly as follows:

1st, A sensible lessening of friction on the rails, and of wear and tear to the machinery of the locomotives and cars.

2d, A general benefit to the whole superstructure of the road, by the trains passing with an easier and less jarring action.

3d. A greater degree of comfort to the passengers, owing to the exemption from the usual loud and annoying rattling of the cars and engines.

4th, An increased speed to the trains, with the same power, arising from the uniform steadiness and decrease of friction to the rails, cars, etc.

And lastly, a material saving in the annual expenditure for repairs.

A drawing, illustrating the application of India-rubber to this purpose, will be found in the American Railroad Journal, under date of May 26, 1849.

The annexed certificate, among others in the hands of the patentee, will explain the nature of this improvement.

"J. ELNATHAN SMITH, Esq.,

Dear Sir: In relaying the New Orleans and Carrollton railroad, I applied Vulcanized India-rubber in the Chairs, under the *joints* of the rails, of 1-10 of an inch thick, with the happiest result. The road thus laid has been in constant daily use since August last, and I cannot perceive the least deterioration. The rubber acts admirably as a *wedge,* in the way I use it, as well as a perfect preventive of the battering down of the ends of the rails. It also makes the road unusually smooth —for in riding over it I have not been able to detect the joints; and I have had the assertion of several observers of such matters to the same effect. We are delighted with it here, and think it a very important simple, and cheap acquisition in the permanent maintenance of railroads.

The annexed sketch of the chair I use, will give an idea how the rubber acts as a wedge. They weigh 13 lbs. and are 7 inches square—are accurately cast to one size, and when in their places, ready for the rails, I place a piece of the rubber 1-10 of an inch thick thereon. The width of the base of the rail, and the length of the chair is 3½ by 7 inches. The rail is then forced in *sideways,* which, owing to there being but 1-16 of an inch space for 1-10 inch thickness of rubber, requires considerable pressure; consequently, the elasticity keeps the rail tight up to the clip of the chair *A.* I have closely observed the joints when the engine passed over them, but could not detect any depression of the rails separate from each other.

I find that the cost for the rubber will be about 7 cts. per *joint,* which for 21 feet rails, will be about $35 per mile, *exclusive of the patent right.*

The rubber I use is of excellent quality, and made in pieces of about 20 to 30 yards long, and 25 inches wide, (1-10 of inch thick,) and weighs about 4 lbs. to the yard in length. I cut 7 pieces in the width, consequently 7 inches in length makes 7 pieces or 7 yards, weighing about 28 lbs., will give 252 pieces, or half a mile of road with 21 feet rails. I am respectfully yours,

JOHN HAMPSON,
Eng. New Orleans and Carrollton Railroad."
New Orleans, March 14, 1849.

Orders received and full information by
J. ELNATHAN SMITH, Patentee,
22 John street,
New York, May 26, 1849.

Fuller's Patent India-Rubber Springs.

THERE *can now be no ground of opposition whatever to these Springs.* The Commissioner of Patents has not only rejected the application for a Patent for a similar Spring, but *a Patent has just been granted for an entirely new species of India Rubber*, the quality of which can be surpassed by no other kind, as the experiments which have lately been publicly made, have fully proved. No extremes of heat or cold can effect it, nor will any amount of pressure permanently alter its shape. This Patent refutes the statement of the "New England Car Company" as to their sole right to use India Rubber.

The Spring (composed by alternate layers of India Rubber Discs and Metal Plates) is superior to any other form of Spring, for several reasons: It is the lightest, the most simple and most durable—there being less friction in this than in other kind; it can be regulated to any extent desired. A less quantity of Rubber is required in this form to make a good spring than in any other because each disc or ring of India Rubber is firmly supported by metal plates, and forms in itself a distinct spring—nor is any spiral spring required. The Patentee is consequently able to supply efficient springs at a less cost than any other parties can do. Purchasers are guaranteed in the use of these springs.

The New England Car Company have *no* right to make an India-rubber Spring with a Bolt through the centre. All companies using such a spring are liable to an action.

Fuller's spring has been used nearly four years with complete success. It is applicable equally to Passenger and Freight Cars, to Locomotives and Tenders.—Bumpers and Draw Springs are always kept on hand, which merely require screwing to a car. It has lately been applied also to several kinds of *Machines.*

Action will be brought against all persons infringing upon these patents.

The subscriber will show Models and Drawings of the various modes of application to Cars, Machines, Omnibuses, &c. G. M. KNEVITT, Agent.

Principal office, No. 38 Broadway, New York.

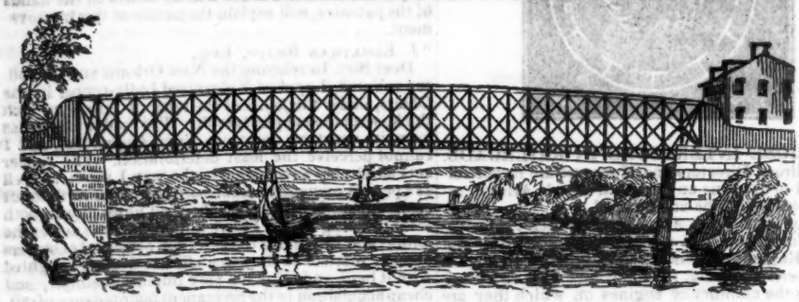
Branch office, Messrs. James Lee & Co.'s, No. 18 India Wharf, Boston.

Mr. Hale, the President of the Boston and Worcester Railroad, wrote an article concerning Fuller's springs. The "New England Car Company" take the liberty of publishing that article, omitting, however, a very important part; it is therefore given in full now, and the portion omitted by the New England Car Company is printed in italics, that the public may judge the manner in which this "company" pervert Mr. Hale's meaning.

[*From the Boston Advertiser of the 7th June*].

INDIA RUBBER SPRINGS FOR RAILROAD CARS.

"Of the numerous uses to which the wonderful elasticity and durability of India rubber, renders this material applicable, we are hardly aware of one in which it has been more successful than in forming springs for railroad cars. We have had occasion to observe, for some months past, its application to this use, on one of the passenger cars on the Newton special train of the Boston and Worcester railroad.—It is there used not only for the springs on which the car rests, but for the springs attached to the draw bar, at each end of the car, to prevent any jar on the sudden commencement, or interruption of the motion of the car. For both these purposes it seems to be admirably adapted, and we do not learn that during that period in which it has been used, any defect has been discovered. It renders the movements of the car extremely easy, and protects it more effectually, we think, than any other spring we have seen in use, from every harsh or unpleasant motion, either vertical or horizontal. It is also simple in its form and application, extremely light, and little liable to get out of repair. During the period of some months in which we have seen the springs in operation, there is no apparent wear or diminution of its efficiency. *Each spring is composed of several circular layers of rings of India rubber, a thin metallic plate of the same size being interposed between each of the layers. From the simplicity of its form, it cannot be expensive, and it admits of being made more or less elastic almost at pleasure. The invention, we understand, was first patented in England, where it has been introduced into general use on several of the principal railroads, and we have no doubt it will come into very extensive use in this country. The patent for this invention, we understand, has been granted to Mr. W. C. Fuller, in England and France, and also in this country. Mr Knevitt, of New York, is the agent for the patentee in the United States, and he has established a branch office for the supply of the article in this city, as may be learned from an advertisement in another column of this paper.*"



RIDER'S PATENT IRON BRIDGE.

THE RIDER IRON BRIDGE having been fully tested on the Harlem Railroad, by constant use for about eighteen months, and found to answer the full expectations of its most sanguine friends, is now offered to the public with the utmost confidence as to its great utility over any other Bridge now known.

The plan of this Bridge is to use the iron so as to obtain its greatest longitudinal strength, and at the same time is so arranged as to secure the combined principles of the *Arch, Suspension and Triangle*, all under such controlling power as causes each to act in the most perfect and secure manner, and at the same time m art its greatest strength to the whole work.

THE IRON RIDER BRIDGE COMPANY are prepared to furnish large quantities of Iron Bridging for Railroad or other purposes, made under the above patent, at short notice, and at prices far *more economical* than the best wood structure, and on *certain conditions*, the first cost may be made the same as wood.

Models, and pamphlets giving full descriptions of the RIDER BRIDGE, with certificates based on actual trial from undoubted sources, will be found at the office of the Company, 74 BROADWAY, *up stairs*, or of W. RIDER & BROTHERS, 58 *Liberty Street*, where terms of contract will be made known, and where orders are solicited.

M. M. WHITE,
Agent for the Company.

November 25, 1848.

RAILROAD India-rubber Springs.

IF any Railroad Company or other party desires it, the NEW ENGLAND CAR COMPANY will furnish India-rubber Car Springs made in the form of washers, with metalic plates interposed between the layers, or in any other form in which they can be made; in all cases guaranteeing the right to use the same against any and all other pretended rights or claims whatsoever.

F. M. Ray, 98 Broadway, New York.
E. CRANE, 99 State Street, Boston.

May 24, 1849.

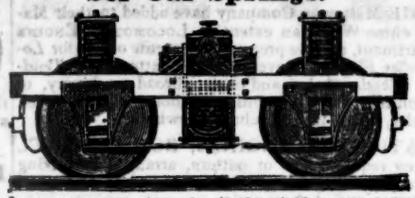
LAP-WELDED WROUGHT IRON TUBES for Tubular Boilers, from 1¼ to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by

IRVING VAN WART,
12 Platt street, New York.

JOB CUTLER, *Patentee.*

☞ These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom.

F. M. Ray's Patent India-rubber Car Springs.



India-rubber Springs for Railroad Cars were first introduced into use, about two years since, by the inventor. The New England Car Company, now possesses the exclusive right to use, and apply them for this purpose in the United States. It is the only concern that has tested their value by actual experiment, and in all arguments in favor of them, drawn from experience of their use, are in those cases where they have been furnished by this company. It has furnished every spring in use upon the Boston and Worcester road, and, in fact, it has furnished all the springs ever used in this country, with one or two exceptions, where they have been furnished in violation of the rights of this company; and those using them have been legally proceeded against for their use, *as will invariably be done in every case of such violation.*

The Spring formed by alternate layers of India-rubber discs and metal plates, which Mr. Fuller claims to be his invention, was invented by Mr. Ray in 1844.—In proof of which we give the deposition of Osgood Bradley, of the firm of Bradley & Rice, of Worcester, Mass., car manufacturers, and men of the highest respectability. In this deposition, in relation to the right of parties to use these springs, he says:

"I have known Mr. Ray since 1835. In the last of May or the commencement of June, 1844, he was at my establishment, making draft of car trucks. He staid there until about the first of July, and left and went to New York. Was gone some 8 or 10 days, and returned to Worcester. He then on his retnrn said he had a spring that would put iron and steel springs into the shade. Said he would show it to me in a day or two. He showed it to me some two or three days afterwards. It was a block of wood with a hole in it. In the hole he had three pieces of India-rubber, with iron washers between them, such as are used under the nuts of cars. Those were put on to a spindle running through them, which worked in the hole. The model now exhibited is similar to the one shown him by Ray. After the model had been put into a vice, witness said that he might as well make a spring of putty. Ray then said that he meant to use a different kind of rubber, and referred to the use of *Goodyear's Metallic Rubber*, and that a good spring would grow out of it." There are many other depositions to the same effect.

The history of the invention of these springs, together with these depositions, proving the priority of the invention of Mr. Ray, will be furnished to all interested at their office in New York.

This company is not confined to any particular form in the manufacture of their springs. They have applied them in various ways, and they warrant all they sell.

The above cut represents precisely the manner in which the springs were applied to the cars on the Boston and Worcester road, of which Mr. Hale, President of this road speaks, and to which Mr. Knevitt refers in his advertisement. Mr. Hale immediately corrected his mistake in the article quoted by Mr. Knevitt, as will be seen by the following from his paper of June 8, 1848. He says:

INDIA-RUBBER SPRINGS FOR RAILROAD CARS.—"In our paper yesterday, we called attention to what promises to be a very useful invention, consisting of the application of a manufacture of India-rubber to the construction of springs for railroad cars. Our object was to aid in making known to the public, what appeared to us the valuable properties of the invention, as they had been exhibited on trial, on one of the passenger cars of the Boston and Worcester railroad. As to the origin of the invention we had no particular knowledge, but we had been informed that it was the same which had been introduced in England, and which had been subsequently patented in this country; and, we were led to suppose that the manufacturers who have so successfully applied this material, in the case to which we referred had become possessed of the right to use that patent. It will be seen from the following communication, addressed to us by a member of the company, by which the Worcester railroad was supplied with the article upon which our remarks were based, that we were in an error, and that the springs here introduced are an American invention, as well as an American manufacture. How far the English invention may differ from it we have had no opportunity of judging."

MR. HALE:—"The New England Car Co., having been engaged for the last six months in introducing the Vulcanized India-rubber Car Spaings upon the different railroads in this and other states, and having in particular introduced it upon the Boston and Worcester railroad with perfect success, were much gratified to find, by your paper of this morning, that the article had given satisfaction to the president of that corporation, and the terms of just commendation in which you were pleased to speak of it. But their gratification was scarcely equalled by their surprise, when, or arriving at the close of your paragraph, they found the results of all their labors attributed to a foreign source, with which the New England Car Co. has no connection. The material used on the Boston and Worcester railroad, and all the other railroads in this country, where any preparation of India-rubber has been successfully applied, is entirely an American invention, patented in the year 1844 to Charles Goodyear, of New Haven, Conn., and the application of it to this purpose and the form in which it is applied are the invention of F. M. Ray of New York. The only material now in use, and so far as has yet appeared, the only preparation of India rubber capable of answering the purpose, has been furnished under these patents by the New England Car Company, manufactured under the immediate inspection of their own agent. If any other should be produced, the right to use it would depend upon the question of its interference with Mr. Goodyear's patent. The New England Car Company have their place of business in this city at No. 99 State street, and are prepared to answer all orders for the Vulcanised India rubber Car Springs, of the same quality and of the same manufacture as those which they have already placed on your road, and most fo the other roads terminating in this city."

And yet Mr. Knevitt is using these experiments made upon the Springs of the Car Company to induce the public to purchase his springs, and is attempting to impose upon them the belief that the springs used were furnished by him! We ask whether such a course is honorable, or entitles his statements to much consideration from the public.

The above Springs are for sale 98 Broadway, New York, and 99 State street, Boston.

EDWARD CRANE Agent, Boston.
F. M. RAY, Agent, New York.

Boston, May 8, 1849.

Devlan's Machinery Oil.

THE Subscribers, Agents for P. S. Devlan & Co's "Patent Lubricating Oil"—price 80c. per gallon 4 mos. or 3 per cent off for cash.

We refer to the following certificate of Messrs. Norris Brothers, in whose works, any one by calling can see the oil in use and judge for themselves.

NORRIS' LOCOMOTIVE WORKS.
Philadelphia, April 2, 1849.

We have been using throughout our Works, during the last six weeks, "Devlan's Lubricating Oil," and so far as we have been able to judge from its use, we think it preferable to the sperm oil generally used, for both heavy and light bearings. NORRIS, BROTHERS.

For sale by ALLEN & NEEDLES,
22 & 23 South Wharves,
14tf Philadelphia Pa.

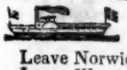
Coal.

CUMBERLAND SEMI-BITUMINOUS COAL superior quality for Locomotives, for sale by
H. B. TEBBETTS,
No. 5½ Pine St., New York.
May 12, 1849. 1m19

RAILROADS.

NORWICH AND WORCESTER RAILROAD.

Summer Arrangement.—1849.



Accommodation Trains daily (Sundays excepted.)

Leave Norwich at 5 am., and 5 pm.

Leave Worcester at 10½ am., and 4½ pm., connecting with the trains of the Boston and Worcester, Providence and Worcester, Worcester and Nashua and Western railroads.

New York & Boston Line. Railroad & Steamers. Leave New York and Boston daily, Sundays excepted, at 5 pm.—At New York from pier No. 18, North River.—At Boston from corner Beach and Albany streets, opposite United States Hotel. The steamboat train stops only at Framingham, Worcester, Danielsonville and Norwich.

Freight Trains leave Norwich and Worcester daily, Sundays excepted.—From Worcester at 6½ am., from Norwich at 9 am.

3tf ly S. H. P. LEE, Jr., Sup't.
May 20, 1849.

EASTERN RAILROAD, Spring and Summer Arrangement. On and after Thursday, March 15,'49,

Trains will leave Eastern Railroad Depot, Eastern Avenue, Commercial-street, Boston, daily, (Sundays excepted.)

For Lynn, 7, 10, a.m., 12, 2½, 3, 4½, 5½, 7, p.m.
Salem, 7, 10, a.m., 12, 2½, 3, 4½, 5½, 7, p.m.
Manchester, 10, a.m., 3, 5½ p.m.
Gloucester, 10, a.m., 3, 5½ p.m.
Newburyport, 7, a.m., 2½, 4½, 7, p.m.
Portsmouth, 7, am., 2½, 4½, pm.
Portland, Me., 7, am., 2½, pm.

And for Boston,

From Portland, 7½, am., 3, pm.
Portsmouth, 7, 9½*, am., 5½*, pm.
Newburyport, 6, 7½, 10½*, am., 6*, pm.
Gloucester, 7, am., 2, 5½ pm.
Manchester, 7½, am., 2½, 5½ pm.,
Salem, 7, 8*, 9*, 10½, 11-40*, am., 2½, 6*, 7* pm.
Lynn, 7½, 8½*, 9½*, 10½, 11-55*, am., 3, 6½*, 7½*, pm.

* *Or on their arrival from the East.*

MARBLEHEAD BRANCH.

Trains leave
Marblehead for Salem, 6½, 8½, 10½, 11-25, am. 2½, 4½, 5½, pm.
Salem for Marblehead, 7½, 9½, 10½, am., 12½, 3½, 5½, 6½, pm.

GLOUCESTER BRANCH.

Trains leave
Salem for Manchester at 10½, am., 3½, 6½ pm.
Salem for Gloucester at 10½, am., 3½, 6½, pm.
Trains leave
Gloucester for Salem at 7, am., 2, 5½ pm.
Manchester for Salem at 7½, am., 2½, 5½, pm.

Freight trains each way daily. Office 17 Merchants' Row, Boston.

Feb. 3. JOHN KINSMAN, Superintendent.

BOSTON AND MAINE RAILROAD.

Spring Arrangement, 1849.
Outward Trains from Boston

For Portland at 6½ am. and 2½ pm.
For Rochester at 6½ am., 2½ pm.
For Great Falls at 6½ am., 2½, 4½ pm.
For Haverhill at 6½ and 12 m., 2½, 4½ 6 pm.
For Lawrence at 6½, 9, am., 12 m., 2½, 4½, 6, 7½ pm.
For Reading 6½, 9 am., 12 m., 2½, 4½, 6, 7½, 9½* pm.

Inward trains for Boston
From Portland at 7½ am., 3 pm.
From Rochester at 9 am., 4½ pm.
From Great Falls at 6½, 9½ am., 4½ pm.
From Haverhill at 7, 8½ 11 am., 3, 6½ pm.
From Lawrence at 6, 7½, 8½, 11½, am., 1½, 3½, 7 pm.
From Reading at 6½, 7½, 9, am., 12 m., 2, 3½, 6, 7½ pm.

MEDFORD BRANCH TRAINS.
Leave Boston at 7, 9½ am., 12½, 2½, 5½, 6½, 9½* pm.
Leave Medford at 6½, 8, 10½ am., 2, 4, 5½, 6½, pm.

* On Thursdays, 2 hours; on Saturdays, 1 hour later. CHAS. MINOT, Super't.

Boston, March 27 1849.

BOSTON & LOWELL RAILROAD.

Passenger trains run as follows, viz:

Express Trains.

Leave Boston at 7½ a.m., 12 m. and 5 p.m.
Leave Lowell at 8 a.m., 12 m. and 4 55 p.m.—or on the arrival of the train from Nashua.

Accommodation Trains.

Leave Boston at 7 5 and 9½ a.m., 2½, 4½ & 6½ p.m.
Leave Lowell at 7 and 10 a.m., 2. 5 and 6 p.m.

Woburn Branch Trains.

Leave Woburn Centre at 6, 7, 9, 10 a.m., 1½ and 4½ p.m.
Leave Boston at 8, 11½ a.m., 3, 5½ and 7 p.m.

On Saturdays, the last train leaves at 8 instead of 7 p.m.

The trains from Boston at 7½ a.m., and 5 p.m., and from Lowell at 4 55 p.m., do not stop at Way Stations. The trains from Lowell at 8 a.m. and from Boston and Lowell at 12 m., stop at no way station except Woburn Watering Place, and there only for Upper Railroad Passengers.

WALDO HIGGINSON,
Agent Boston and Lowell Railroad Cor.
Boston March 5, 1849. 22tf.

ESSEX RAILROAD—SALEM to LAWRENCE, through Danvers, New Mills, North Danvers, Middleton, and North Andover.

On and after Thursday, March 15, trains leave daily (Sundays excepted,) Eastern Railroad Depot, Washington-st.

Salem for South Danvers at 8, am., 12.45, 3.45, 6.30, pm.
Salem for North Danvers at 8, am., 12.45, 3.45, pm.
Salem for Lawrence, 8, am., 3.45, pm.
" North Andover 8, am., 3.45, pm.
" Middleton 8, am., 3.45, pm.
South Danvers for Salem at 6.45, 10.15, am., 2.15, 5.45, pm.
North Danvers " 10, am., 2, 5.40, pm.
Middleton " 9 45, am., 5 15, pm.
North Andover " 9.20, am., 5.05, pm.
Lawrence " 9 15, am., 5, pm.

JOHN KINSMAN, Superintendent.
Salem, Oct. 2, 1848.

BOSTON AND PROVIDENCE RAILROAD.

On and after MONDAY, APRIL 2d, the

Trains will run as follows:—

Steamboat Train—Leave Boston at 5 pm Leaves Providence on the arrival of the train from Stoningtton.

Accommodation Trains—Leave Boston at 8 am., and 4 pm. Leave Providence at 8½, a.m., and 4, pm.

Dedham Trains—Leave Boston at 8½ am, 12 m., 3½, 6½, and 10½ pm. Leave Dedham at 7,9½, am., 2½, 5, and 8 pm.

Stoughton Trains—Leave Boston at 1 am., and 5½ pm. Leave Stoughton at 11½ am., and 3½ pm.

Freight Trains—Leave Boston at 11 am., and 6 pm. Leave Providence at 4 am., and 7.40 am.

On and after Wednesday, Nov. 1, the DEDHAM TRAIN will run as follows: Leave Boston at 9 am., 12 m., 3, 5½, and 10½ pm. Leave Dedham at 8, 10½, am., 1½, 4½, and 9 pm.

WM. RAYMOND LEE, Sup't.

FITCHBURG RAILROAD.—

On and after Monday, April 23d, 1849, Trains will run as follows:

Express Train.

Leaves Boston at 7½ a.m.; Fitchburgh at 3 55 p.m. or upon arrival of the trains from the upper roads.

Accommodation Up Trains.

For Groton, West Townsend and Fitchburg, 6 50 and 11 a.m. and 3 40 p.m.
Concord, 6 50 and 11 a.m., 3 40 and 7 p m.
Waltham, 6 50, 7 35, 10 and 11 a.m., 1 45, 3 25, 3 40 and 7 p.m.
Fresh Pond, Mount Auburn and Watertown, 9 a.m., 12 m. and 2 20 and 7 15 p.m.
West Cambridge and Lexington, 9 30 a.m., 2 30 and 6 30 p.m.

Down Trains.

From Fitchburg, 7 50, 11 55 a.m. and 4 40 p.m.
West Townsend, 7 30, 11 55 a m. and 4 40 p.m.
Groton, 8 20 a.m., 12 30 and 5 15 p.m.
Concord, 6 25 and 9 a.m., 1 10 and 5 55 p.m.
Waltham, 6 50, 8 15, 9 25 and 11 a.m, 1 35, 2 35, 4 30 and 6 20 p.m.
West Cambridge and Lexington, 7 and 11 15 a.m and 4 45 p.m.
Fresh Pond, Mount Auburn and Watertown, 7 15 and 10 a.m., 1 30 and 4 30 p.m.
The 6 50 a.m. up train will not stop at Stony Brook, Lincoln and Lunenburg.
The 11 a.m. up train will not stop at Weston and West Acton.
The 3 40 pm. up train will not stop at Charlestown Porters, West Cambridge and Lunenburg.
The morning train down will not stop at Lunenburg and Lincoln.
The evening train down will not stop at Lunenburg and Stony Brook.

S. M. FELTON, Superintendent.
Bostor., April 21, 1849. 22tf

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.
Jan. 20, 1849.

NEW YORK AND ERIE RAILROAD. EXTENDED TO OWEGO.

On and after the 1st June, the trains will run as follows, daily, excepting Sundays: For Passngers—Through trains will leave New York for Owego by steamboat, from the Duane-st. pier, at 7½ o'clock, A.M. and 5 o'clock, P.M. stopping at Ramapo Station, Chester, Goshen, Middletown, Otisville, Port Jervis and all the way stations west of the last-named place; and will leave Owego on and after the 4th June, at 6 A.M. and 7 P.M.; and Binghamton, on and after the 1st June, at 7 A.M. and 8 P.M. arriving in New York at 7½ P.M. and 8½ A.M. stopping at all the way stations between Owego and Port Jervis; and, east of Port Jervis, at Otisville, Middletown, Goshen, Chester, Ramapo Station and Spring Valley. Way Trains for Port Jervis and all the intermediate stations, will leave New York, by steamboat Thomas Powell, from Duane-st. pier, at 7½ A.M. and 4 P.M.; and will leave Port Jervis at 6 A.M. and 4 P.M. Milk Trains—A train leaves Otisville at 5½ A.M. arriving in New York about 11. The afternoon milk is taken by the train leaving Port Jervis at 4 o'clock P.M. and arriving in New York about midnight. Freight—Freight leaves New York every night for all the regular stations on the road. A freight train will leave Owego every morning at 6 o'clock; and another will leave Port Jervis, as usual, every morning at 8 o'clock, with market freight, &c. JAS P. KIRKWOOD,

May 30, 1849. Superintendent.

NEW YORK & HARLEM RAILROAD, DAILY. WINTER ARRANGEMENT.

ON and after December 1st, 1848, the Cars will run as follows, until further notice:—

Trains will leave the City Hall, New York, for Harlem and Morrisiana at 7, 9, 9.30, 11, am. 12 m., 2, 4, 4.15, 5.30, pm.

Trains will leave the City Hall, New York, for Fordham and Williams' Bridge, at 7 30 and 9 30 am., 12 m., 2, 4 15, 5 30 pm.

Trains will leave the City Hall, New York, for Hunt's Bridge, Underhill's and Hart's Corners, at 9 30 am., 4 15 pm.

Trains will leave the City Hall, New York, for Tuckahoe and White Plains, at 7 30 and 9 30 am., 3 and 4 15 pm.

Trains will leave Davis' Brook, Pleasantville, Chapequa, Mount Kisko, Bedford, Mechanicsville, Purdy's and Croton Falls, at 7 30 and 9 30 am., 3 pm.

NOTICE—Passengers are reminded of the great danger of standing upon the platform of the cars, and hereby notified that the practice is contrary to the rules of the Company, and that they do not admit any responsibility for injury sustained by any passenger upon the platforms, in case of accident.

Returning to New York will leave

Morrisiana and Harlem at 7 20,8, 8 50, 10 am., 12m., 1 35, 3, 3 45, 5, 5 35 pm.

Fordham and William's Bridge at 7, 8 30, 9 50 am., 1 15, 3 25, 5 20 pm.

Hunt's Bridge at 8 20, am., 3 18 pm.

Underhill's Road at 8 10 am., 3 08 pm.

Tuckahoe at 8 05, 9 30 am., 3 05, 5 pm.

Hart's Corners at 7 55 am., 2 52 pm.

White Plains at 7 45, 9 10 am., 2 45, 4 40 pm.

Davis' Brook at 9 am., 2 35, 4 30 pm.

Pleasantville at 8 49 am., 2 20, 4 19 pm.

Mount Kisko at 8 30 am., 2, 4 pm.

Bedford at 8 25 am., 1 55, 3 55 pm.

Mechanicsville at 8 15 am., 1 45, 3 45 pm.

Purdy's at 8 05 am., 1 35, 3 35 pm.

Croton Falls, at 8 am., 1 30, 3 30 pm.

The trains for Harlem and Morrisiana leaving City Hall at 7, 9, 9 30, 11, 12, 2, 4, and 5 30, and from Morrisiana and Harlem at 7 20, 8, 10, 12, 1 35, 3, 3 45, and 5 o'clock, will land and receive passengers at 27th st., 42d, 51st, 61st, 79th, 86th, 109th, 115th, 125th, and 132d streets.

The 7 30 am., and 3 pm. Trains from New York to Croton Falls, and the 8 am. Train from Croton Falls will not stop between White Plains and New York, except at Tuckahoe, Williams' Bridge and Fordham.

A car will precede each train ten minutes to take up passengers in the city. The last car will not stop, except at Broome st. and 32d street.

Freight Trains leave New York at 6 am. and 1 pm.: leave Croton Falls at 7 am. and 2 30 pm., Sundays excepted.

NOTICE—On Sundays the 7 am. to Harlem and Morrisiana, returning at 8 o'clock, and the 7 30 am. to Croton Falls, returning 1 30 pm., will be omitted, and the 7 am. from Williams Bridge will leave at 7 40

ST. LAWRENCE & ATLANTIC RAILROAD COMPANY.

Notice is hereby given that the Trains run twice per day between Montreal and St. Hyacinthe, leaving each terminus alternately, until further notice.

Leaverng St. Hyacinth at	-	-	7 am.
" "	-	-	3 pm.
Leaving Montreal at	-	-	10 am.
" "	-	-	6 pm.

THOMAS STEERS, *Secretary.*

May 31, 1849.

BALTIMORE AND SUSQUEHANNA RAILROAD.—Reduction of Fare. Morning and Afternoon Trains between Baltimore and York.—The Passenger Trains run daily, except Sundays, as follows:

Leave Baltimore at	-	-	9 am. and 3½ pm.
Arrive at	-	-	9 am. and 6½ pm.
Leave York at	-	-	5 am. and 3 pm.
Arrive at	-	-	12½ pm. & 8 pm.
Leave York for Columbia at		-	1½ pm. & 8 am.
Leave Columbia for York at		-	8 am. & 2 pm.

Fare:

Fare to York	-	-	$1 50
" Wrightsville	-	-	2 00
" Columbia	-	-	2 12½

Way points in proportion.

PITTSBURG, GETTYSBURG, AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg	-	-	$9
Or via Lancaster by railroad	-	-	10
Through tickets to Harrisburg or Gettysburg		-	3

In connection with the afternoon train at 3½ o'clock, a horse car is run to Green Spring and Owing's Mill, arriving at the Mills at - - 5½ pm.

Returning, leaves Owing's Mills at - - 7 am.

D. C. H. BORDLEY, Sup't.

31 1y Ticket Office, 63 North st.

GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA TO DALTON, 100 MILES.

This Road, in connection with the South Carolina Railroad, and Western and Atlantic Railroad, now forms a continuous line, 408 miles in length, from Charleston to Dalton Cross Plains) in Murray county, Ga. 32 miles from Chattanooga, Tenn.

RATES OF FREIGHT.		Between Augusta and Dalton. 271 miles.	Between Charleston, and Dalton. 408 miles.
1st class	Boxes of Hats, Bonnets, and Furniture, per cubic foot - -	$0 18	$0 28
2d class	Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs, and Confectionary, per 100 lbs.	1 00	1 50
3d class	Sugar, Coffee, Liquor, Bagging, Rope, Cotton, Yarns Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow ware, Castings, Crockery, etc.	0 60	0 85
4th class	Flour Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc. - - -	0 40	0 65
	Cotton, per 100 lbs. -	0 45	0 70
	Molasses per hogshead -	8 50	13 50
	" " barrel - -	2 50	4 25
	Salt per bushel - -	0 18	
	Salt per Liverpool sack -	0 65	
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows - -	0 75	1 50

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Company will be forwarded free of commissions. Freights payable at Dalton.

F. C. ARMS,

44*1y Sup't of Transportation.

LITTLE MIAMI RAILROAD.—WINTER ARRANGEMENT.

Change of Hours.

On and after Thursday, November 9th, 1848, until further notice, Passenger Trains will run as follows:

Leave Depot East Front street at 9½ o'clock, am., and 2½ o'clock, p.m., for Milford, Foster's Crossings, Deerfield, Morrow, Waynesville, Spring Valley, Xenia, Yellow Springs, and Springfield.

Returning, leave Springfield, at 2½ o'clock, and 9½ o'clock, am.

Passengers for New York, Boston, and intermediate points, should take the 9½ o'clock, am., Train from Cincinnati.

Passengers for Columbus, Zanesville, Wheeling and intermediate towns, should take the 9½ o'clock, am., Train.

The Ohio Stage Company are running the following lines in connection with the Trains:

A Daily Daylight Line to Columbus from Springfield in connection with the Morning Train from Cincinnati. Also, Daily Lines to Columbus, from Xenia and Springfield, connecting with the 2½ o'clock, pm. Train from Cincinnati.

The 2½, pm., Train from Cincinnati, and 2½, am., Train from Springfield, are intended for the accommodation of Way Passengers only, and will be eight hours on the road.

Fare from Cincinnati to Xenia		- -	$1 90
Do	do	Springfield - -	2 50
Do	do	Sandusky City -	6 50
Do	do	Buffalo - -	10 00
Do	do	Columbus - -	4 50

For other information and through tickets, apply at the Ticket Office on Broadway, near Front-st., Cincinnati.

W. H. CLEMENTS, Superintendent.

☞ The Company will not be responsible for Baggage exceeding 50 dollars in value, unless the same is returned to the Conductors or Agent, and freight paid at the rate of a passage for every 500 dollars in value to that amount.

BALTIMORE AND OHIO RAILROAD, MAIN STEM. The Train carrying the Great Western Mail leaves Baltimore every morning at 7½, and Cumberland at 8 o'clock,

passing Ellicott's Mills, Frederick, Harper's Ferry, Martinsburgh and Hancock, connecting daily each way with—the Washington Trains at the Relay House seven miles from Baltimore, with the Winchester Trains at Harper's Ferry—with the various railroad and steamboat lines between Baltimore and Philadelphia, and with the lines of Post Coaches between Cumberland and Wheeling and the fine Steamboats on the Monongahela Slack Water between Brownsville and Pittsburgh. Time of arrival at both Cumberland and Baltimore 5½ P. M. Fare between these points $7, and 4 cents per mile for less distances.—Fare through to Wheeling $11, and time about 36 hours, to Pittsburgh $10, and time about 32 hours.—Through tickets from Philadelphia to Wheeling $13, to Pittsburgh $12. Extra train daily, except Sundays, from Baltimore to Frederick at 1 P. M., and from Frederick to Baltimore at 8 A. M.

WASHINGTON BRANCH.

Daily trains at 9 A. M., and 5 P. M., and 12 at night from Baltimore, and at 6 A. M. and 5½ P. M. from Washington, connecting daily with the lines North, South and West, at Baltimore, Washington, and the Relay House. Fare $1 60 through between Baltimore and Washington, in either direction, 4 cents per mile for intermediate distances. s13 y1

PHILADELPHIA, WILMINGTON, & BALTIMORE RAILROAD.

Summer Arrangement.

April 1st, 1849.—Fare $3.

Leave Philadelphia 8½ am., and 10 pm.

Leave Baltimore 9 am, and 8 pm.

Sunday—Leave Philadelphia at 10 pm.

" " Baltimore at 8 pm.

Trains stop at way stations.

Charleston, S. C.

Through tickets Philadelphia to Charleston, $20.

Pittsburg and Wheeling.

Through ticket, Philadelphia to Pittsburg, $12.

" " Wheeling, 13.

Through tickets sold at Philadelphia office only.

Wilmington Accommodation.

Leave Philadelphia at 12 m. 4 and 7 pm.

Leave Wilmington at 7½ am., 4½ and 7 pm.

Newcastle Line.

Leave Philadelphia at 2½ pm.—Baltimore at 1½ pm.

Fare $3.—Second class, $2.

N.B.—Extra baggage charged for.

I. R TRIMBLE, Gen. Supt.